UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

INSTRUMENTATION AND TELEMETRY SYSTEMS

AFSC 2E8X1

AFPT 90-2E8-094

AUGUST 1997

OCCUPATIONAL MEASUREMENT SQUADRON
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PREFACE

This report presents the results of an Air Force Occupational Survey of the Instrumentation and Telemetry Systems career ladder, Air Force Specialty Code (AFSC) 2E8X1. Authority for conducting occupational surveys is contained in AFI 36-2623. Copies of this report and pertinent computer printouts are distributed to the Air Force Functional Manager, the operations training location, all major using commands, and other interested operations and training officials.

The survey instrument was developed by Captain Carol A. Owen (CAF), Inventory Development Specialist, with computer programming support furnished by Mr. Tyrone Hill and administrative support provided by Staff Sergeant Sharon L. Stephens. Second Lieutenant Diedre N. Presley, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Roger W. Barnes, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Additional copies of this report can be obtained by writing to AFOMS, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph AFB Texas 78150-4449, or by calling DSN 487-6623. For information on the Air Force occupational survey process or other on-going projects, visit our web site at http://www.omsq.af.mil.

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SUMMARY OF RESULTS

1. **Survey Coverage**: The Instrumentation and Telemetry Systems career ladder was surveyed to obtain current task and equipment data for use in evaluating current training programs. Survey results are based on responses from 299 respondents (75 percent of the total assigned personnel). The survey sample satisfactorily represents the overall career ladder population.

2. **Specialty Jobs**: Two clusters and one independent job were identified in the sample: One cluster was directly involved in performing general maintenance duties and tasks pertaining to instrumentation and telemetry systems. The remaining cluster and jobs reflected a combination of technical and supervisory task performance and training activities.

3. **Career Ladder Progression**: Skill-level progression for members of this AFSC is typical of most career ladders. Personnel at the 3- and 5-skill levels perform many tasks in common, and both groups spend the vast majority of their relative job time performing instrumentation and telemetry equipment maintenance. At the 7-skill level, although members still perform a substantial amount of routine day-to-day technical instrumentation and telemetry system tasks, a shift toward supervisory and management functions is evident. Personnel at the 9-skill level and Chief Enlisted Managers spend their relative job time exclusively on managing instrumentation and telemetry programs and facilities.

4. **Training Analysis**: A comprehensive review of the Specialty Training Standard (STS) found that most paragraphs were supported by the survey data. However, a few areas in the STS display tasks with less than the recommended percent members performing. These areas should be reviewed to determine any modifications required to improve the effectiveness or efficiency of training. The Plan of Instruction was not covered in this report due to recent changes being worked at the technical school.

5. **Job Satisfaction Analysis**: Job satisfaction for respondents in this study and members of similar AFSCs surveyed in 1996 were compared. Data show AFSC 2E8X1 personnel have somewhat higher satisfaction indicators than their counterparts in other mission equipment management AFSCs. Overall satisfaction has improved over the years. Members of most jobs find their work interesting and feel their talents and training are well used.

6. **Implications**: The Instrumentation and Telemetry Systems Career Ladder has seen only minor changes in career structure since the previous survey in 1991. The basic premise of performing operations and maintenance functions has remained constant. Personnel in the Instrumentation and Telemetry Cluster make up the bulk of the career ladder. Members of the Instrumentation and Telemetry specialty appear to be satisfied with their jobs, with job satisfaction indicators generally higher than those in the 1991 survey.

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OCCUPATIONAL SURVEY REPORT (OSR)
INSTRUMENTATION AND TELEMETRY SYSTEMS
(AFSC 2E8X1)

INTRODUCTION

This is a report of an occupational survey of the Instrumentation and Telemetry Systems (AFSC 2E8X1) career ladder completed by the Air Force Occupational Measurement Squadron (AFOMS). These data will be utilized to review the AFMAN 36-2108 *Specialty Description* and training documents. The last OSR was published in February 1991.

Background

As described in the AFMAN 36-2108 *Specialty Description*, dated 31 October 1993, personnel in this career ladder perform and manage design support, installation, calibration, testing, operation, maintenance, and repair of instrumentation and telemetry facilities, systems, equipment, and related subsystems. They also monitor, analyze, and direct performance checks and measurements of instrumentation and telemetry systems to ensure acceptable performance.

Entry into the career ladder currently requires an Armed Services Vocational Aptitude Battery Electronic score of 67. The sequence of operational training for this AFSC begins with attending a 119-day Instrumentation and Telemetry Systems Apprentice Training Course conducted at Keesler AFB MS. This includes 74 days of electronics principles. This course curriculum includes training in assembling, installing, adjusting, and maintaining mechanical, electrical, and electronic equipment used to monitor and collect flight test range data and to measure the performance of test and research projects; strong emphasis on the practical application of electronic principles and use of electronic schematics; adjustment, calibration, and malfunction analysis of instrumentation and telemetry components; and familiarization with Air Force technical orders, manuals, directives, and other maintenance publications. The course uses electronic fundamental trainers, transmitters, receivers, recorders, ground and airborne digital/analog telemetry equipment, close circuit TV systems, microprocessors, and computers. Upon successful completion of the Instrumentation and Telemetry Systems Apprentice Training Course students are awarded the 3-skill level.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) Air Force Personnel Test 90-2E8-094, dated 27 February 1996. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, pertinent tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 25 subject-matter experts at the technical training location and the following operational bases:

BASE	UNIT VISITED
Keesler AFB MS	336 TRS/TTOT
Holloman AFB NM	746 TS/CCS
Vandenberg AFB CA	30 MXS/LGMS
Edwards AFB CA	450 TS/LGHSKP
Hill AFB UT	649 MUNS/MATC
Tyndall AFB FL	82 ATRS/LG

The resulting JI contains a comprehensive listing of 675 tasks grouped under 15 duty headings and a background section requesting such information as grade, duty title, organizational level, type of facility where employed, testing and calibration equipment used, and equipment maintained.

Survey Administration

From September through December 1996, Base Training Offices administered the inventory to 358 eligible AFSC 2E8X1 personnel. To qualify for the survey, personnel were required to hold a duty AFSC of 2E831, 2E851, 2E871, 2E891, or 2E800. Excluded from the survey were personnel in PCS, student, or hospital status, or with less than 6 weeks on the job. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Personnel Center, Randolph AFB TX.

Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point

scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount time spent).

To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time spent for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across major commands (MAJCOM) and paygrade groups. All eligible AFSC 2E8X1 personnel were mailed survey booklets. Table 1 reflects the percentage distribution, by MAJCOM, of assigned AFSC 2E8X1 personnel as of August 1996. The 299 respondents in the final sample represent 75 percent of the total assigned personnel. Table 2 reflects the paygrade distribution for these AFSC 2E8X1 personnel. The survey sample is considered to be a satisfactory representation of the career ladder population.

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. While most participants in the survey process completed a USAF JI, selected senior AFSC 2E8X1 personnel were also asked to complete booklets rendering judgments on task training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the JIs. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Training Emphasis (TE). TE is a rating of the amount of emphasis that should be placed on tasks in entry-level training. The 26 senior AFSC NCOs who completed a TE booklet were asked to select tasks they felt required some sort of structured training for entry-level personnel and then indicate how much training emphasis these tasks should receive, from 1 (extremely low emphasis) to 9 (extremely high emphasis). Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams, formal on-the-job-training (OJT), or any other organized training method. The interrater reliability was excellent, indicating very strong agreement among the 26 raters as to which tasks required some form of structured training and which did not. The average TE rating was 1.21, with a standard deviation of 1.14. Any task with a TE rating of 2.35 or above is considered to have high TE.

Task Difficulty (TD). TD is an estimate of the amount of time needed to learn how to do each task satisfactorily. The 29 senior NCOs who completed TD booklets were asked to rate the difficulty of each task using a 9-point scale (extremely low to extremely high). Interrater

TABLE 1

MAJCOM DISTRIBUTION OF AFSC 2E8X1 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
AFMC	68	66
ACC	16	17
AFSPC	11	13
AETC	3	2
OTHER	2	2

TOTAL ASSIGNED = 399*
TOTAL SURVEYED = 358**
TOTAL IN SURVEY SAMPLE = 299
PERCENT OF ASSIGNED IN SAMPLE = 75%
PERCENT OF SURVEYED IN SAMPLE = 84%

* Assigned strength as of August 1996
** Excludes personnel in PCS, student, or hospital status, or less than 6 weeks on the job

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
E-1 to E-3	14	16
E-4	28	26
E-5	28	30
E-6	15	13
E-7	11	11
E-8, E-9	4	4

* Assigned strength as of August 1996

reliability was acceptable, with high agreement. Ratings were standardized, so tasks have an average difficulty of 5.00 and a standard deviation of 1.00. Any task with a TD rating of 6.00 or above is considered to be difficult to learn.

When used in conjunction with the primary criterion of percent members performing, TE and TD ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS

(Career Ladder Structure)

The occupational analysis process begins with an examination of the career ladder structure. The structure of jobs within the Instrumentation and Telemetry Systems career ladder was examined on the basis of similarity of tasks performed and the relative percent of time spent ratings provided by job incumbents, independent of other specialty background factors.

The first step in the analysis process is to identify the structure of the career ladder in terms of the jobs performed by the respondents. Comprehensive Occupational Data Analysis Programs (CODAP) assist by creating an individual job description for each respondent based on the tasks performed and relative amount of time spent on the tasks. The CODAP automated job clustering program then compares all the individual job descriptions, locates the two descriptions with the most similar tasks and time spent ratings, and then combines them to form a composite job description. In successive stages, new members are added to the initial group or new groups are formed based on the similarity of tasks performed and time spent ratings.

The basic group used in the hierarchical clustering process is the *Job*. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and identified as a *Cluster*. The structure of the career ladder is then defined in terms of jobs and clusters of jobs. The resulting job structure information can be used to evaluate the accuracy of career ladder documents (i.e., AFMAN 36-2108 *Specialty Descriptions*, the Career Field Education and Training Plan, and Specialty Training Standard (STS) and to gain a better understanding of current utilization patterns.

Overview of Specialty Jobs

Structure analysis identified two clusters and one job within the survey sample. Based on task similarity and relative time spent, the jobs performed by AFSC 2E8X1 personnel are illustrated in Figure 1. A listing of those jobs is provided below. The stage (ST) number shown beside each title is a reference to computer-printed information; the number of personnel in each stage (N) is also shown.

INSTRUMENTATION AND TELEMETRY SYSTEMS SPECIALTY JOBS (N = 299)

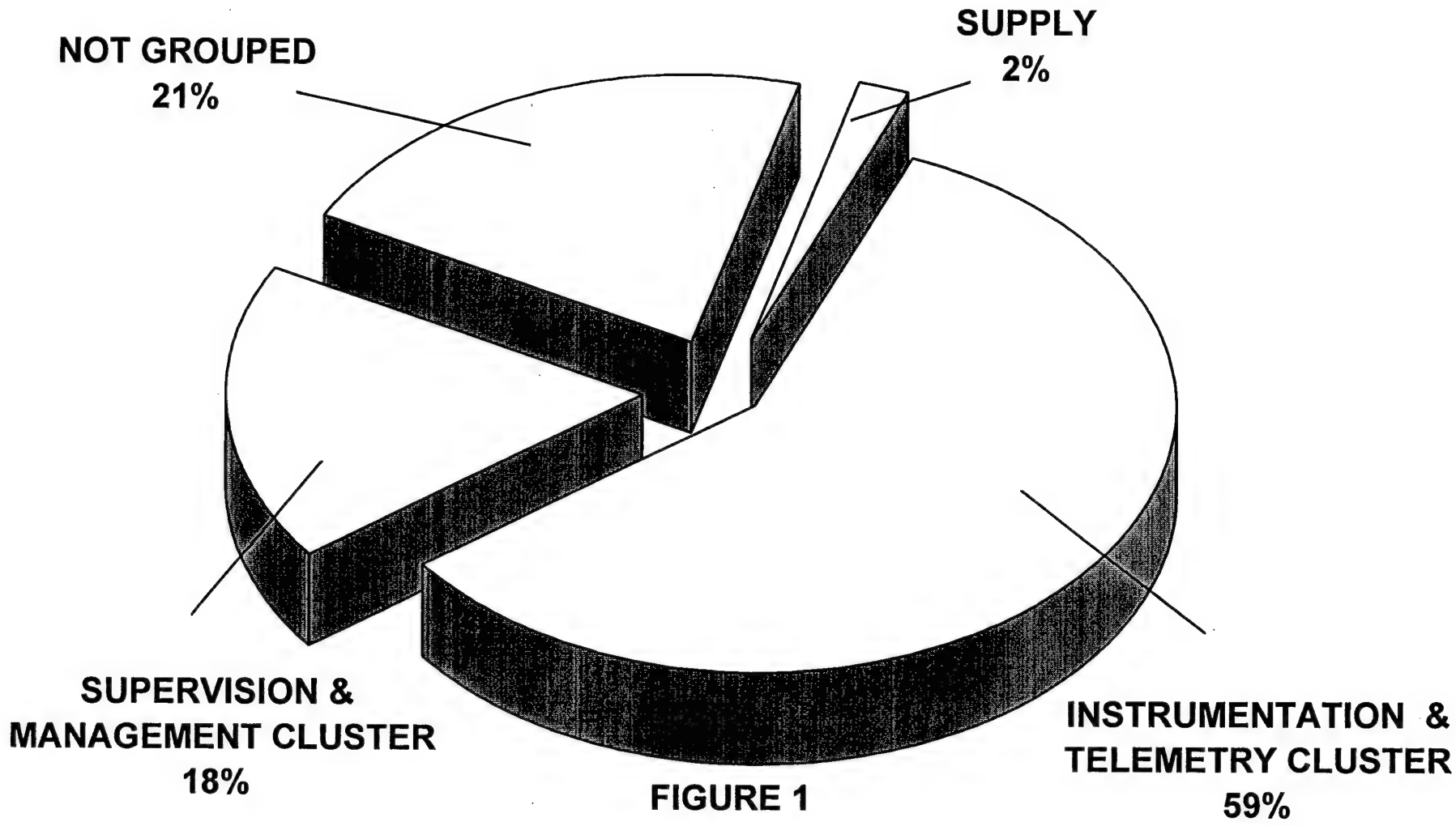

FIGURE 1

I. INSTRUMENTATION AND TELEMETRY CLUSTER (ST027, N=175)

A. General Maintenance Job (ST028, N=48)
B. Test and Evaluation Job (ST039, N=126)

II. SUPERVISORY AND MANAGEMENT CLUSTER (ST049, N=54)

A. Supply Job (ST151, N=6)
B. Management Job (ST103, N=34)
C. Contract Job (ST085, N=7)

III. SUPPLY JOB (ST075, N=6)

The respondents forming these jobs account for 79 percent of the survey sample. The remaining 21 percent are performing tasks or a series of tasks that did not group with any of the defined jobs. Job titles given by respondents representative of these personnel include: Manpower Superintendent, NCOIC Behavioral Science, NCOIC Special Operations, CDC Writer, Sled Crew Chief, and NCOIC Biomedical Engineer.

Group Descriptions

The following paragraphs contain brief descriptions of the jobs identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of these specialty jobs. Selected background data for these jobs are provided in Table 4. Representative tasks for all the jobs are contained in Appendix A.

I. INSTRUMENTATION AND TELEMETRY CLUSTER (ST027). Accounting for 59 percent of the survey sample, this cluster is composed of 175 airmen. They perform a wide variety of general maintenance and test and evaluation activities. This is the core job for this AFSC with 76 percent of these incumbents' relative job time spent maintaining, inspecting, installing, removing, and testing instrumentation and telemetry equipment, while constructing electronic circuits or devices. These individuals perform a very broad job, averaging 102 tasks, covering every duty in the JI.

Two jobs were identified within this cluster. The General Maintenance Job includes the maintaining of instrumentation and telemetry systems through the installation, removal, inspection, alignment, calibration, and construction of equipment. The Test and Evaluation Job includes the analysis of missile and airborne systems.

A. General Maintenance Job (ST028). The 48 respondents in this job account for 16 percent of the survey sample. They perform a number of tasks dealing specifically with maintaining instrumentation and telemetry systems, installing or removing electrical equipment, and constructing circuits. Members with this job spend 47 percent of their duty time performing instrumentation and telemetry equipment maintenance (Table 3, Duty F), and 21 percent

TABLE 3

RELATIVE PERCENT TIME SPENT PERFORMING DUTIES BY SPECIALTY JOBS

DUTIES	INSTRUMENTATION AND TELEMETRY CLUSTER		SUPERVISORY AND MANAGEMENT CLUSTER			
	GENERAL MAINTENANCE (ST028, N=48)	TEST AND INSPECTION (ST039, N=126)	SUPPLY (ST151, N=6)	MANAGEMENT (ST103, N=34)	CONTRACT (ST085, N=7)	SUPPLY JOB (ST075, N=6)
A INSTALLING OR REMOVING INSTRUMENTATION AND TELEMETRY EQUIPMENT	21	17	3	1	2	7
B INSPECTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	7	12	3	3	2	4
C ALIGNING OR CALIBRATING INSTRUMENTATION AND TELEMETRY EQUIPMENT	6	6	2	~	~	2
D TESTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	7	11	2	3	4	7
E ANALYZING TEST DATA AND DEVELOPING TECHNICAL DATA	1	3	3	2	11	~
F MAINTAINING INSTRUMENTATION AND TELEMETRY EQUIPMENT	26	17	9	2	1	6
G CONSTRUCTING ELECTRONIC CIRCUITS OR DEVICES	10	3	3	~	2	1
H PERFORMING MISSION SUPPORT ACTIVATES	4	4	5	5	12	~
I INSTALLING OR TESTING MUNITIONS OR ORDNANCE DEVICES	1	1	~	~	~	~
J PERFORMING AIRCREW ACTIVITIES	1	1	~	3	2	~
K PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	9	11	41	62	51	15
L PERFORMING TRAINING ACTIVITIES	4	4	4	10	1	1
M PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2	3	6	5	3	6
N PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	5	5	18	2	5	50
O PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	2	2	1	3	3	0

* Denotes less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY CLUSTERS AND JOBS

	INSTRUMENTATION AND TELEMETRY CLUSTER		SUPERVISORY AND MANAGEMENT CLUSTER			
	GENERAL MAINTENANCE JOB	TEST AND INSPECTION JOB	SUPPLY JOB	MANAGEMENT JOB	CONTRACT JOB	SUPPLY JOB
NUMBER IN GROUP	48	126	6	34	7	6
PERCENT OF SAMPLE	16%	42%	2%	11%	2%	2%
PERCENT IN CONUS	96%	99%	100%	97%	86%	100%
DAFSC DISTRIBUTION:						
2E831	17%	17%	0%	0%	0%	17%
2E851	54%	45%	17%	0%	0%	67%
2E871	19%	13%	67%	68%	71%	17%
2E891	0%	0%	17%	26%	29%	0%
2E800	0%	0%	0%	6%	0%	0%
PREDOMINANT GRADE(S)	E-4	E-4/E-5	E-5	E-7	E-7	E-4
AVERAGE MONTHS IN CAREER FIELD	59	79	159	194	158	67
AVERAGE MONTHS IN SERVICE	83	99	185	226	210	92
PERCENT IN FIRST ENLISTMENT (1-48 MOS TAFMS)	40%	27%	0%	0%	0%	34%
PERCENT SUPERVISING	18%	45%	33%	93%	42%	17%
AVERAGE NUMBER OF TASKS PERFORMED	87	120	88	88	72	30

performing installation or removal of instrumentation and telemetry equipment (Table 3, Duty A). They perform an average of 57 tasks and are distinguished by the time they spend performing the following tasks:

solder or desolder components
assemble or disassemble equipment, parts, or supplies
assemble or disassemble test equipment or cables
perform continuity checks of electrical harnesses
install or remove instrumentation cables
install or remove electrical harnesses or connectors
install or remove instrumentation racks or associated equipment
remove or replace chassis or circuit card assemblies
construct interconnecting cabling
remove or replace integrated circuits

Representative task modules (TM) for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
40	construct or design circuits	10	5	29
47	antenna systems maintenance	7	5	35
50	electronic circuit maintenance	4	2	31
56	assemble or disassemble instrumentation/electrical equipment	10	17	69
58	construct or fabricate cables	5	5	48
60	remove or replace circuits	6	5	43

These representative TMs illustrate the concentration on instrumentation and telemetry systems maintenance.

Sixty-seven percent of these individuals hold the 5-skill level while 17 percent have a 3-skill level. Forty-four percent are in the paygrade E-4, with an additional 34 percent in paygrades E-5 and E-6. The average time in the career field is 5 years, with an average of 7 years total time in service. This job contains the highest number of members in their first enlistment (40 percent).

B. Test and Evaluation (ST039). These individuals account for 72 percent of this cluster and 42 percent of the survey sample. The responsibilities of these respondents differ from those in the General Maintenance Job, while they perform many of the same general tasks, they spend more time on tasks related specifically to test and inspection of missile and airborne systems. These tasks are base specific and are performed at the following bases: Vandenberg

AFB (ICBM), Hill AFB (ICBM), Holloman AFB (Aircraft Missiles and Navigation Systems), Edwards AFB (AWACS), and Barksdale AFB (ACM, ALCM, B-1, B-52). Members with this job spend 34 percent of their duty time performing maintenance and installing activities (Table 3, Duties A and F), and 27 percent performing tasks common to test and evaluation functions (Table 3, Duties B, D, E, and I). They perform an average of 120 tasks, which is a higher average than for any other job within the survey sample. Typical tasks include:

assemble or disassemble test equipment or cables
collect test data
isolate equipment malfunctions
perform continuity checks of electrical harnesses
monitor data collecting systems
operationally check antenna systems
inspect installation of electrical harnesses or connectors
operationally check data collecting systems
adjust voltages or frequencies
perform pretest systems checks or calibrations
perform corrections or repairs during tests

Sixty-eight percent of these individuals hold the 5-skill level, while 19 percent have a 3-skill level. Forty-two percent are in the paygrade E-5 with an additional 32 percent in E-4. The average time in the career field is 6.5 years with an average of 8 years total time in service. Twenty-seven percent of these members are in their first enlistment.

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
47	antenna systems maintenance	7	4	54
51	power supply maintenance	4	2	58
52	battery maintenance	3	1	54
56	assemble or disassemble instrumentation/electrical	10	8	74
58	construct or fabricate cables	5	3	57
59	testing instrumentation and telemetry equipment	7	5	62

These TMs emphasize the test and maintenance environment that these members can be expected to perform their job.

II. SUPERVISORY AND MANAGEMENT CLUSTER (ST049). Comprising the most senior members in the survey sample, these 54 members (making up 18 percent of the survey sample) spend 57 percent of their relative job time performing staffing and supervisory functions necessary for the day-to-day operations of a instrumentation and telemetry systems organization. These individuals average 84 tasks.

Three jobs were identified in this cluster. The following narrative describes the work performed.

A. Supply Job (ST151). These six individuals are responsible for performing general supply and equipment activities to ensure that the necessary items are available upon request. They spend 18 percent of their relative job time on general supply and equipment activities (Table 3, Duty N), but 41 percent of their relative job time is dedicated to management and supervisory activities necessary for acquisition of supplies (Table 3, Duty K). These members perform an average of 88 tasks. Typical supply tasks include:

determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
evaluate serviceability of equipment, tools, parts, or supplies
evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
initiate requisitions for equipment, tools, parts, or supplies
coordinate supply-related matters with appropriate agencies
identify and report equipment or supply problems
pick up or deliver equipment, tools, parts, or supplies
initiate letters of justification for supply-related matters
inventory equipment, tools, parts, or supplies
maintain benchstock parts or equipment levels

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
30	coordinate or plan work activities	2	3	92
33	evaluate or implement logistic standards	8	9	81
42	evaluate or develop security programs	5	3	63
46	perform administrative and supply activities	8	10	90
57	maintain or initiate equipment orders/documentation	8	8	81
83	maintain or establish administrative activities	3	2	61

These TMs illustrate the supervisory and supply activities typical of the work performed by these airmen.

Averaging 15 years TAFMS, 4 of these 6 incumbents hold the 7-skill level. The predominant paygrade for these individuals is E-5 (50 percent), with the remaining individuals in paygrade E-7. There are no first-enlistment personnel assigned to this job.

B. Management Job (ST103). Comprising the most senior and experienced individuals in the career ladder, these 34 members account for 11 percent of the survey sample. These members perform management duties almost exclusively as 72 percent of their relative job time is spent on supervisory, management, and training functions (Table 3, Duties K and L). Ninety-three percent of these individuals report supervising an average of seven members. In addition to management, 10 percent of their relative job time is devoted to performing general administrative and technical order system and mission support activities. The following tasks demonstrate the nature of work performed by these senior individuals:

participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting
supervise military personnel
write performance reports or supervisory appraisals
determine or establish work assignments or priorities
assign personnel to work areas or duty positions
conduct general meetings, such as staff meetings, briefings, conferences, or workshops
evaluate personnel for promotion, demotion, reclassification, or special awards
write recommendations for awards or decorations
evaluate personnel for compliance with performance standards
conduct supervisory performance feedback sessions

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
30	coordinate or plan work activities	2	3	83
36	perform management/supervisory activities	12	9	64
78	first line supervisors	9	13	91
27	evaluate personnel performance patterns	5	7	88
80	develop or evaluate work schedules	6	6	74
81	determine or implement training requirements	9	6	57

As illustrated, management and supervisory activities are the focus of concentration for these members.

Members with this job are senior, as they average 19 years total time in service and 16 years time in the career field. Sixty-five percent of these individuals hold the 7-skill level, while 15 percent hold the 9-skill level. Sixty-eight percent of these members are in paygrade E-6 and E-7. There are no first-enlistment personnel assigned to this job. Ninety-three percent of these members report supervising an average of 7 people.

C. Contract Job (ST085). Sixty-three percent of these 7 incumbents' relative job time is spent performing management and mission support activities (Table 3, Duties K and H). Their primary responsibility is to ensure that proper coordination of work activities with contractor personnel are processed in a timely manner, analysis of test requirements are done to determine support such as equipment, facilities, or personnel, and evaluation of budget requirements. The seven respondents in this job account for 2 percent of the survey sample. Tasks which characterize the average 72 tasks performed include:

coordinate work activities with contractor personnel
evaluate contractor proposals
analyze test requirements to determine support such as equipment, facilities, or personnel
determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
evaluate contractor test reports
coordinate test support with base support agencies
evaluate budget requirements
coordinate technical plans with other agencies or higher headquarters
coordinate host-tenant or interservice agreements with appropriate agencies
coordinate instrumentation checkouts with other test teams

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
23	evaluate or plan tests	4	4	54
30	coordinate or plan work activities	2	4	86
31	coordinate TDY orders	2	1	50
77	coordinate and analyze test systems	7	10	74
78	first line supervisors	9	7	44
88	perform contract management activities	6	8	57

As indicated by these TMs, tasks covering contract activities define the essence of this job.

Seventy-one percent of these individuals hold the 7-skill level, while 29 percent have a 9-skill level. Forty-three percent of these members are in paygrade E-7, with an additional 29 percent in E-5/E-8. The average time in the career field is 13 years, with an average of 18 years total time in service (second most experienced).

III. SUPPLY JOB (ST075). These six respondents account for 6 percent of the survey sample (smallest of all groups). The members in this job are distinguished by the time they spend performing tasks related specifically to general supply and equipment activities. This job differs from the Supply Job (ST151) that is identified under the Supervisory and Management Cluster because the members with this job spend 50 percent of their duty time performing general supply and equipment activities (Table 3, Duty F). Only 15 percent of their relative job time is spent performing management and supervisory functions (Table 3, Duty K). They perform an average of only 30 tasks, fewer than members of any other job. Typical tasks include:

inventory equipment, tools, parts, or supplies
initiate documentation to turn in excess or surplus property
initiate requisitions for equipment, tools, parts, or supplies
store equipment, tools, parts, or supplies
identify and report equipment or supply problems
maintain organizational equipment or supply records, such as custodian authorization/custody receipt listings (CA/CRLs)
participate in general meetings, such as staff meetings, briefings, conferences or workshops, other than conducting
maintain precision measurement equipment (PME) calibration schedules
pick up or deliver equipment, tools, parts, or supplies
coordinate supply-related matters with appropriate agencies

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
33	evaluate or implement logistic standards	8	5	221
30	coordinate or plan work activities	2	4	50
46	perform administrative and supply activities	8	28	71
56	assemble or disassemble instrumentation/electrical equipment	10	3	23
57	maintain or initiate equipment orders/documentation	8	24	63
59	testing instrumentation and telemetry equipment	7	4	22

As indicated by these TMs, tasks covering supply activities define the essence of this job.

Eighty-three percent of these individuals hold the 5-skill level, while 17 percent have a 7-skill level. Fifty percent of these members are in the paygrade E-4, with an additional 33 percent in paygrade E-5. The average time in the career field is 6 years (second least experienced) with an average of 8 years total time in service. Forty percent are in their first enlistment. One-hundred percent of the members report they are assigned to units within the CONUS.

Comparison of Current Jobs to Previous Survey Findings

The results of the specialty job analysis were compared to those of OSR AFPT 90-316-884, Instrumentation, dated February 1991. After reviewing the jobs identified in 1991, all of the groups with substantial numbers of personnel could be matched to similar jobs in the current study (see Table 5). Even though some comparable groups from 1991 to 1997 reflect different percentages of the sample, this variation could generally be attributed to modifications in the task list or to the analysis approach used.

There was one job (accounting for 1 percent of the survey sample) identified in the 1991 career ladder structure that did not have a direct match in the current study. Logistics is the one job that had no apparent counterpart. Tasks performed by personnel in these jobs, not identified in the current survey, are still being performed, but not at a level which resulted in these members forming distinct jobs. Differences in job names reflect how tasks were grouped. Aside from these minor variations involving a very small numbers of personnel, the vast majority of the current sample were found to be performing jobs identified in 1991, thus displaying a relative stable career ladder over time.

TABLE 5

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1991 SURVEYS

CURRENT SURVEY (N=299)	PERCENT OF SAMPLE	1991 SURVEY (N=353)	PERCENT OF SAMPLE
INSTRUMENTATION AND TELEMETRY CLUSTER (N=175)	59%	INSTRUMENT TEST PROCEDURES JOB (N=22)	6%
		AIRBORNE TELEMETRY JOB (N=55)	16%
		MISSILE SYSTEMS JOB (N=9)	2%
		CIRCUIT CONSTRUCTION JOB (N=25)	7%
		EQUIPMENT INSTALLATION JOB (N=15)	4%
		CIRCUIT TESTING JOB (N=25)	2%
		CABLING JOB (N=9)	3%
		AIRCRAFT INSTRUMENTATION JOB (N=8)	2%
		MUNITIONS JOB (N=8)	2%
SUPERVISORY AND MANAGEMENT CLUSTER (N=54)	18%	SUPERVISORY JOB (N=13)	14%
SUPPLY JOB (N=6)	2%	SUPPLY JOB (N=11)	3%
		LOGISTICS JOB (N=5)	1%

- Indicates no match in report

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as the AFMAN 36-2108 *Specialty Description* and the STS reflect what career ladder personnel are actually doing in the field and what is required of their members.

The distribution of skill-level groups across the career ladder specialty jobs is displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across the skill-level groups. The Instrumentation and Telemetry Systems career ladder has 71 percent of the sample holding either the 3- or 5-skill level. A typical pattern of progression is present, with personnel spending more of their relative time on duties involving supervisory, managerial, and training tasks as they move upward toward the 7- or 9-skill level, or the CEM code. It is also obvious, though, that 7-skill level personnel are still involved with technical task performance, as will be pointed out in the specific skill-level group discussions below.

Skill-Level Descriptions

DAFSC 2E831. The 43 airmen in the 3-skill level group represent 14 percent of the survey sample. Seventy-four percent of the 3-skill level members are in the Instrumentation and Telemetry Cluster and 2 percent are in the Supply Job (see Table 6). They perform an average of 65 tasks, with 13 tasks accounting for over 50 percent of their relative job time. Performing a highly technical job, 94 percent of their relative duty time is devoted to technical duties such as maintaining instrumentation and telemetry equipment, installing or removing instrumentation and telemetry equipment, and testing and inspecting instrumentation and telemetry equipment (see Table 7). Table 8 displays representative tasks performed by the highest percentages of these airmen.

TABLE 6

DISTRIBUTION OF AFSC 2E8X1 GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT)

SPECIALTY JOBS	DAFSC 2E831 (N=43)	DAFSC 2E851 (N=170)	DAFSC 2E871 (N=74)	DAFSC 2E891/2E800 (N=12)
I. INSTRUMENTATION AND TELEMETRY CLUSTER (N=175)	74	70	32	~
II. SUPERVISORY AND MANAGEMENT CLUSTER (N=54)	~	8	41	83
III. SUPPLY JOB (N=6)	2	3	~	~
IV. NOT GROUPED	24	19	27	17

- Denotes duty not performed
~ Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 7

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY AFSC 2E8X1 GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES		DAFSC 2E831 (N=43)	DAFSC 2E851 (N=138)	DAFSC 2E871 (N=74)	DAFSC 2E891/2E800 (N=12)
A	INSTALLING OR REMOVING INSTRUMENTATION AND TELEMETRY EQUIPMENT	19	16	7	2
B	INSPECTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	11	9	6	2
C	ALIGNING OR CALIBRATING INSTRUMENTATION AND TELEMETRY EQUIPMENT	9	5	3	-
D	TESTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	13	9	5	6
E	ANALYZING TEST DATA AND DEVELOPING TECHNICAL DATA	2	3	4	5
F	MAINTAINING INSTRUMENTATION AND TELEMETRY EQUIPMENT	20	17	8	1
G	CONSTRUCTING ELECTRONIC CIRCUITS OR DEVICES	5	4	3	1
H	PERFORMING MISSION SUPPORT ACTIVATES	3	4	4	7
I	INSTALLING OR TESTING MUNITIONS OR ORDNANCE DEVICES	3	1	1	-
J	PERFORMING AIRCREW ACTIVITIES	1	2	2	4
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3	13	40	63
L	PERFORMING TRAINING ACTIVITIES	1	4	9	2
M	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	2	3	3	4
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	9	7	4	2
O	PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	1	3	2	2

- Indicates no members or nonresponse

NOTE: Columns may not add up to 100 percent due to rounding

TABLE 8

REPRESENTATIVE TASKS PERFORMED
BY DAFSC 2E831 PERSONNEL
(N=43)

SELECTED TASKS		PERCENT MEMBERS PERFORMING
F336	Solder or desolder components	74
F317	Assemble or disassemble test equipment or cables	72
F337	Splice cabling or wiring	60
F316	Assemble or disassemble equipment, parts, or supplies	58
A66	Install or remove power supplies	58
F325	Perform continuity checks of electrical harnesses	56
D266	Operationally check antenna systems	53
D264	Isolate equipment malfunctions	53
C197	Adjust voltages or frequencies	51
A41	Install or remove instrumentation cables	51
A42	Install or remove instrumentation racks or associated equipment	51
N648	Inventory equipment, tools, parts, or supplies	49
A6	Install or remove antennas	49
D262	Collect test data	47
D287	Perform pretest systems checks or calibrations	47
B157	Inspect power supplies	47
A1	Establish setup requirements for instrumentation equipment	44
N655	Store equipment, tools, parts, or supplies	42
B108	Inspect batteries	42
F329	Remove or replace batteries, such as nickel cadmium, lead acid, or alkaline	42
B136	Inspect installation of electrical harnesses or connectors	42
D281	Perform corrections or repairs during tests	42
G424	Construct interconnecting cabling	40
N654	Pick up or deliver equipment, tools, parts, or supplies	40
G441	Fabricate test cables	40
H463	Interpret blueprints, cabling, or circuit schematic diagrams	40
B107	Inspect antenna systems	40
B137	Inspect installation of panels, doors, hatches, or cableways	40
A56	Install or remove panels, doors, hatches, or cableways	37
F369	Troubleshoot installation of electrical harnesses or connectors	37
F318	Charge or discharge batteries	37

Average number of tasks performed = 65

Representative TMs for this 3-skill level group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
47	antenna systems maintenance	7	4	37
51	power supply maintenance	4	3	42
53	battery maintenance	3	2	40
56	assemble or disassemble instrumentation/electrical equipment	10	12	55
58	construct or fabricate cables	5	3	37
59	testing instrumentation and telemetry equipment	7	5	40

These TMs indicate the scope of 3-skill level members' activities and provide emphasis and direction for training, or as a minimum, a starting point for resident training, with an emphasis on general maintenance activities.

DAFSC 2E851. The 170 airmen in the 5-skill level group constitute 57 percent of the survey sample (largest DAFSC group of the survey) and perform an average of 85 tasks, with 20 tasks accounting for over half of their relative job time. Seventy percent of these 5-skill level members are in the Instrumentation and Telemetry Cluster and 8 percent are in the Supervisory and Management Cluster (see Table 6). Performing a highly technical job, 80 percent of their relative job time is devoted to duties covering maintaining instrumentation and telemetry equipment, installing or removing instrumentation and telemetry equipment, and inspecting and testing instrumentation and telemetry equipment (see Table 7). Table 9 displays representative tasks performed by the highest percentages of these airmen. Table 10 displays those tasks that reflect differences between the 3- and 5-skill level groups. A review of the tasks reveals that 5-skill level airmen perform virtually the same technical tasks as do the 3-skill level members. However, a higher percentage of 3-skill level members perform these tasks. The 5-skill level members are primarily differentiated in that they perform some management or supervisory functions, although to a limited degree.

TABLE 9

REPRESENTATIVE TASKS PERFORMED
BY DAFSC 2E851 PERSONNEL
(N=170)

SELECTED TASKS		PERCENT MEMBERS PERFORMING
F316	Assemble or disassemble equipment, parts, or supplies	71
F317	Assemble or disassemble test equipment or cables	69
F336	Solder or desolder components	69
F337	Splice cabling or wiring	62
F325	Perform continuity checks of electrical harnesses	62
A66	Install or remove power supplies	59
A42	Install or remove instrumentation racks or associated equipment	56
D264	Isolate equipment malfunctions	55
N648	Inventory equipment, tools, parts, or supplies	54
A41	Install or remove instrumentation cables	51
D262	Collect test data	50
B136	Inspect installation of electrical harnesses or connectors	49
F330	Remove or replace chassis or circuit card assemblies	49
A6	Install or remove antennas	49
G424	Construct interconnecting cabling	48
H463	Interpret blueprints, cabling, or circuit schematic diagrams	48
A26	Install or remove electrical harnesses or connectors	48
L594	Conduct OJT	48
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	47
C197	Adjust voltages or frequencies	47
D281	Perform corrections or repairs during tests	45
N654	Pick up or deliver equipment, tools, parts, or supplies	45
N655	Store equipment, tools, parts, or supplies	44
B157	Inspect power supplies	44
A56	Install or remove panels, doors, hatches, or cableways	43
D266	Operationally check antenna systems	42
G441	Fabricate test cables	42
D265	Monitor data collecting systems	41
F329	Remove or replace batteries, such as nickel cadmium, lead acid, or alkaline	41
A1	Establish setup requirements for instrumentation equipment	41

Average number of tasks performed = 85

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 2E831 AND DAFSC 2E851 PERSONNEL
(PERCENT MEMBERS PERFORMING)

SELECTED TASKS		DAFSC 2E831 (N=43)	DAFSC 2E851 (N=170)	DIFF
A44	Install or remove load simulators	28	6	22
478	Operationally check safe and arm devices	33	13	20
B140	Inspect load simulators	28	9	19
A94	Install or move transponders	33	15	18
F323	Configure battery power supplies or UPSs	28	11	17
F322	Clean or prepare test surfaces	30	14	16
B185	Inspect voltage and current monitoring systems	28	12	16
D289	Perform test countdown checklist functions	30	15	15
D267	Operationally check command destruct systems	30	15	15
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	12	47	-35
K517	Determine or establish work assignments or priorities	0	34	-34
K581	Supervise military personnel	5	35	-30
K520	Develop or establish work methods or procedures	9	38	-29
K514	Counsel subordinates concerning personal matters	5	32	-27
K584	Write performance reports or supervisory appraisals	2	29	-27
L594	Conduct OJT	21	48	-27
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	7	33	-26
F333	Remove or replace integrated circuits	16	39	-23

Representative TMs for this 5-skill level group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
46	perform administrative and supply activities	8	4	37
47	antenna systems maintenance	7	3	39
56	assemble or disassemble instrumentation/electrical equipment	10	9	60
58	construct or fabricate cables	5	3	43
59	testing instrumentation and telemetry equipment	7	5	42
60	remove or replace circuits	6	3	38

These TMs illustrate the scope of 5-skill level members' activities and provide emphasis and direction for training. They can serve as a starting point for upgrade training to journeyman, with an emphasis on instrumentation and telemetry systems maintenance.

DAFSC 2E871. The 74 NCOs in this 7-skill level group constitute 25 percent of the survey sample and perform an average of 91 tasks. Forty-one percent of these 7-skill level members are in the Supervisory and Management Cluster and 32 percent are in the Instrumentation and Telemetry Cluster (see Table 6). Fifty-two percent of their relative job time is spent on the usual supervisory, management, and training duties and 49 percent is spent performing maintaining instrumentation and telemetry equipment, installing or removing instrumentation and telemetry equipment, and inspecting and testing instrumentation and telemetry equipment (see Table 7). The display of tasks in Table 11 clearly shows supervisory responsibilities and also reflects the range and scope of the job. Table 12 displays those tasks that differentiate between the 5- and 7-skill level groups and also reflects the supervisory responsibilities incumbent to the 7-skill level population. Tasks performed by higher percentages of 5-skill level personnel are technical and operational in nature, whereas higher percentages of 7-skill level personnel perform the higher level supervisory and management functions.

Representative TMs for this 7-skill level group:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
30	coordinate or plan work activities	2	3	60
77	coordinate and analyze test systems	7	3	35
78	first line supervisors	9	9	60
79	evaluate personnel performance patterns	5	4	54
80	develop or evaluate test work schedules	6	3	43
81	determine or implement training requirements	9	5	42

TABLE 11

REPRESENTATIVE TASKS PERFORMED
BY DAFSC 2E871 PERSONNEL
(N=74)

	SELECTED TASKS	PERCENT MEMBERS PERFORMING
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	74
K514	Counsel subordinates concerning personal matters	68
K506	Conduct self-inspections or self-assessments	65
K517	Determine or establish work assignments or priorities	64
K581	Supervise military personnel	64
K584	Write performance reports or supervisory appraisals	62
K509	Conduct supervisory performance feedback sessions	62
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	59
K549	Evaluate personnel for compliance with performance standards	58
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	57
K505	Conduct safety inspections of equipment or facilities	57
K585	Write recommendations for awards or decorations	57
K501	Assign personnel to work areas or duty positions	55
K576	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	55
K520	Develop or establish work methods or procedures	54
K521	Develop or establish work schedules	51
K550	Evaluate personnel for promotion, demotion, reclassification, or special awards	51
K535	Establish performance standards for subordinates	51
K570	Plan or schedule work assignments or priorities	50
K560	Inspect personnel for compliance with military standards	49
L597	Determine training requirements	47
L594	Conduct OJT	47
K512	Coordinate work activities with contractor personnel	46
H444	Analyze test requirements to determine support such as equipment, facilities, or personnel	45
K508	Conduct supervisory orientations for newly assigned personnel	45
L609	Maintain training records or files	45
H445	Coordinate instrumentation checkouts with other test teams	45
K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	43

Average number of tasks performed: 91

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 2E851 AND DAFSC 2E871 PERSONNEL
(PERCENT MEMBERS PERFORMING)

SELECTED TASKS		DAFSC 2E851 (N=170)	DAFSC 2E871 (N=74)	DIFF
F317	Assemble or disassemble test equipment or cables	69	26	43
F316	Assemble or disassemble equipment, parts, or supplies	71	31	40
A42	Install or remove instrumentation racks or associated equipment	56	23	33
F337	Splice cabling or wiring	62	30	32
F336	Solder or desolder components	69	36	33
F325	Perform continuity checks of electrical harnesses	62	31	31
A6	Install or remove antennas	49	20	29
A66	Install or remove power supplies	59	31	28
F324	Modify or demodify instrumentation systems	39	14	25
N655	Store equipment, tools, parts, or supplies	44	19	25
K576	Schedule personnel for temporary duty (TDY) assignments	12	55	-43
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	19	57	-38
K514	Counsel subordinates concerning personal matters	32	68	-36
K501	Assign personnel to work areas or duty positions	21	55	-34
K585	Write recommendations for awards or decorations	23	57	-34
K509	Conduct supervisory performance feedback sessions	29	62	-33
K584	Write performance reports or supervisory appraisals	29	62	-33
K506	Conduct self-inspections or self-assessments	33	65	-32
K502	Assign sponsors for newly assigned personnel	9	41	-32
K549	Evaluate personnel for compliance with performance standards	28	58	-30

These TMs indicate the scope of 7-skill members' activities and provide emphasis and direction for training or a starting point for upgrade training to craftsman, with an emphasis on both general and specific supervisory and management activities as they apply to instrumentation and telemetry systems activities.

DAFSC 2E891/2E800. The 12 senior NCOs in this 9-skill level/CEM group constitute 4 percent of the survey sample and perform an average of 74 tasks. Eighty-three percent of these 9-skill level/CEM members are in the Supervisory and Management Cluster (see Table 6). Table 7 shows that 65 percent of their relative job time is spent in the supervisory, management, and training duties (i.e., Duties K, and L). An additional 4 percent of their relative job time is spent on administrative functions. Table 13 clearly shows the breadth of supervisory and management functions 9-skill level and CEMs perform. It also reflects that these senior NCOs perform limited technical AFSC-specific tasks. Table 14 displays those tasks that clearly show the differences between the 7-skill level and the 9-skill level/CEM groups. It also clearly reflects the upper-level management responsibilities' incumbent to the 9-skill levels/CEMs.

Representative TMs for this 9-skill level/CEM group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
30	coordinate or plan work activities	2	5	79
31	coordinate TDY orders	2	1	54
36	perform management/supervisory activities	12	12	57
77	coordinate and analyze test systems	7	6	51
78	first line supervisors	9	13	69
79	evaluate personnel performance patterns	5	5	58

These TMs indicate the emphasis of 9-skill level/CEMs is on performance of supervisory and upper-level management responsibilities.

Summary

Progression in this career ladder follows a regular pattern of highly technical tasks focused at the lower skill levels, with a broadening into supervisory and management tasks at the higher skill levels. The 3-, 5-, and 7-skill level airmen perform many tasks in common and each group spends the vast majority of their relative job time on maintaining instrumentation and telemetry equipment. The 5- and 7-skill level groups are performing similar technical tasks,

TABLE 13

REPRESENTATIVE TASKS PERFORMED
BY DAFSC 2E891/2E800 PERSONNEL
(N=13)

	SELECTED TASKS	PERCENT MEMBERS PERFORMING
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	92
K585	Write recommendations for awards or decorations	92
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	92
K514	Counsel subordinates concerning personal matters	83
K529	Draft budget requirements	75
K506	Conduct self-inspections or self-assessments	75
K574	Review drafts of instructions, manuals, or other directives	75
H444	Analyze test requirements to determine support such as equipment, facilities, or personnel	75
K501	Assign personnel to work areas or duty positions	75
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	75
K581	Supervise military personnel	67
K528	Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	67
K584	Write performance reports or supervisory appraisals	67
K517	Determine or establish work assignments or priorities	67
K512	Coordinate work activities with contractor personnel	67
K522	Develop organizational or functional charts	67
K545	Evaluate job-related suggestions	67
K583	Write job or position descriptions	67
K550	Evaluate personnel for promotion, demotion, reclassification, or special awards	67
K560	Inspect personnel for compliance with military standards	67
H449	Coordinate test support with base support agencies	67
K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	67
M621	Coordinate obtaining TDY orders with appropriate agencies	67
K556	Indorse performance reports or supervisory appraisals	58
K502	Assign sponsors for newly assigned personnel	58
K549	Evaluate personnel for compliance with performance	58
K534	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)	58
D265	Monitor data collecting systems	58
K509	Conduct supervisory performance feedback sessions	58
K544	Evaluate job or position descriptions	58

Average number of tasks performed: 74

TABLE 14

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 2E871 AND DAFSC 2E891/2E800 PERSONNEL
(PERCENT MEMBERS PERFORMING)

SELECTED TASKS		DAFSC 2E871 (N=74)	DAFSC 2E891/2E800 (N=12)	DIFF
L605	Evaluate progress of trainees	42	8	34
L615	Schedule personnel for training	32	0	32
L604	Evaluate personnel to determine training needs	41	8	33
A26	Install or remove electrical harnesses or connectors	31	0	31
K548	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	39	8	31
L594	Conduct OJT	47	17	30
G424	Construct interconnecting cabling	28	0	28
K543	Evaluate job hazards or compliance with Air Force	36	8	28
F336	Solder or desolder components	36	8	28
L609	Maintain training records or files	45	17	28
K529	Draft budget requirements	31	75	-44
H449	Coordinate test support with base support agencies	27	67	-40
K522	Develop organizational or functional charts	30	67	-37
M621	Coordinate obtaining TDY orders with appropriate agencies	30	67	-37
K545	Evaluate job-related suggestions	30	67	-37
K574	Review drafts of instructions, manuals, or other directives	39	75	-36
K528	Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	31	67	-36
J490	Coordinate flight missions or activities with appropriate agencies	7	42	-35
K585	Write recommendations for awards or decorations	57	92	-35
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	57	92	-35

with the exception of the 7-skill level members who perform some supervisory and management tasks. The 9-skill level/CEM group reflects upper level supervisory and management responsibilities.

ANALYSIS OF MAJCOMs

The tasks and background data for personnel of the four MAJCOMs with the largest AFSC 2E8X1 populations were compared to determine whether job content varied as a function of command assignment. Generally, the jobs performed across the commands were similar, with only minor differences noted. The largest percentage of relative job time in each command is committed to tasks covering the maintenance of instrumentation and telemetry equipment, installing or removing instrumentation and telemetry equipment, and inspecting and testing instrumentation and telemetry equipment (see Table 15).

TRAINING ANALYSIS

One of the many sources of information that can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment is the OSR. Factors which may be used in evaluating training include the overall description of the job being performed by first-enlistment personnel and their overall distribution across career ladder jobs, percentages of first-job (1-24 months TAFMS) or first-enlistment (1-48 months TAFMS) members performing specific tasks, or using certain equipment or tools, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

First-Enlistment Personnel

In this study, there are 72 members in their first enlistment (1-48 months TAFMS), representing 24 percent of the total survey sample. The activities performed by these personnel are highly technical in nature, accounting for approximately 94 percent of their relative duty time (see Table 16). Reviewing Table 16, it is clearly evident that first-enlistment personnel are spending most of their time performing tasks under Duty F (Maintaining Instrumentation and Telemetry Equipment) and Duty A (Installing or Removing Instrumentation and Telemetry Equipment). Distribution of first-enlistment personnel across the career ladder jobs is displayed in Figure 2, which shows that the largest percentage of first-enlistment airmen work in the Instrumentation and Telemetry Cluster (53 percent). Table 17 lists representative tasks performed by these members and shows that most tasks relate to maintaining instrumentation and telemetry equipment and installing or removing instrumentation and telemetry equipment.

One of the objectives of this survey project was to gather data for the training wing pertaining to the various types of equipment tested, used, operated, or maintained. Accordingly, Tables 18 through 21 represent percentages of first-enlistment airmen responding to this question concerning their activities involving these items. Information was gathered on 184 different

TABLE 15

PERCENT TIME SPENT ON DUTIES BY MAJCOM GROUPS

DUTIES	AETC (N=7)	ACC (N=51)	AFMC (N=197	AFSPC (N=37)
A INSTALLING OR REMOVING INSTRUMENTATION AND TELEMETRY EQUIPMENT	4	15	15	10
B INSPECTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	5	11	7	14
C ALIGNING OR CALIBRATING INSTRUMENTATION AND TELEMETRY EQUIPMENT	4	4	5	6
D TESTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	1	10	8	11
E ANALYZING TEST DATA AND DEVELOPING TECHNICAL DATA	*	4	3	3
F MAINTAINING INSTRUMENTATION AND TELEMETRY EQUIPMENT	6	14	15	14
G CONSTRUCTING ELECTRONIC CIRCUITS OR DEVICES	2	4	4	*
H PERFORMING MISSION SUPPORT ACTIVATES	1	5	4	2
I INSTALLING OR TESTING MUNITIONS OR ORDNANCE DEVICES	-	*	1	*
J PERFORMING AIRCREW ACTIVITIES	-	3	2	*
K PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	24	17	20	20
L PERFORMING TRAINING ACTIVITIES	29	4	4	6
M PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	3	4	3	3
N PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	9	4	7	7
O PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	12	1	2	2

* Denotes less than 1 percent
\- Denotes duty not performed

NOTE: Columns may not add to 100 percent due to rounding

TABLE 16

RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES
BY FIRST-ENLISTMENT PERSONNEL

DUTIES		PERCENT TIME SPENT
A	INSTALLING OR REMOVING INSTRUMENTATION AND TELEMETRY EQUIPMENT	20
B	INSPECTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	11
C	ALIGNING OR CALIBRATING INSTRUMENTATION AND TELEMETRY EQUIPMENT	8
D	TESTING INSTRUMENTATION AND TELEMETRY EQUIPMENT	11
E	ANALYZING TEST DATA AND DEVELOPING TECHNICAL DATA	2
F	MAINTAINING INSTRUMENTATION AND TELEMETRY EQUIPMENT	22
G	CONSTRUCTING ELECTRONIC CIRCUITS OR DEVICES	5
H	PERFORMING MISSION SUPPORT ACTIVATES	3
I	INSTALLING OR TESTING MUNITIONS OR ORDNANCE DEVICES	2
J	PERFORMING AIRCREW ACTIVITIES	1
K	PERFORMING MANAGEMENT AND SUPERVISORY ACTIVITIES	3
L	PERFORMING TRAINING ACTIVITIES	1
M	PERFORMING GENERAL ADMINISTRATIVE AND TECHNICAL ORDER SYSTEM ACTIVITIES	1
N	PERFORMING GENERAL SUPPLY AND EQUIPMENT ACTIVITIES	8
O	PERFORMING MAINTENANCE MANAGEMENT ACTIVITIES	2

NOTE: Columns may not add up to 100 percent due to rounding

INSTRUMENTATION AND TELEMETRY SYSTEMS FIRST-ENLISTMENT JOBS (N=72)

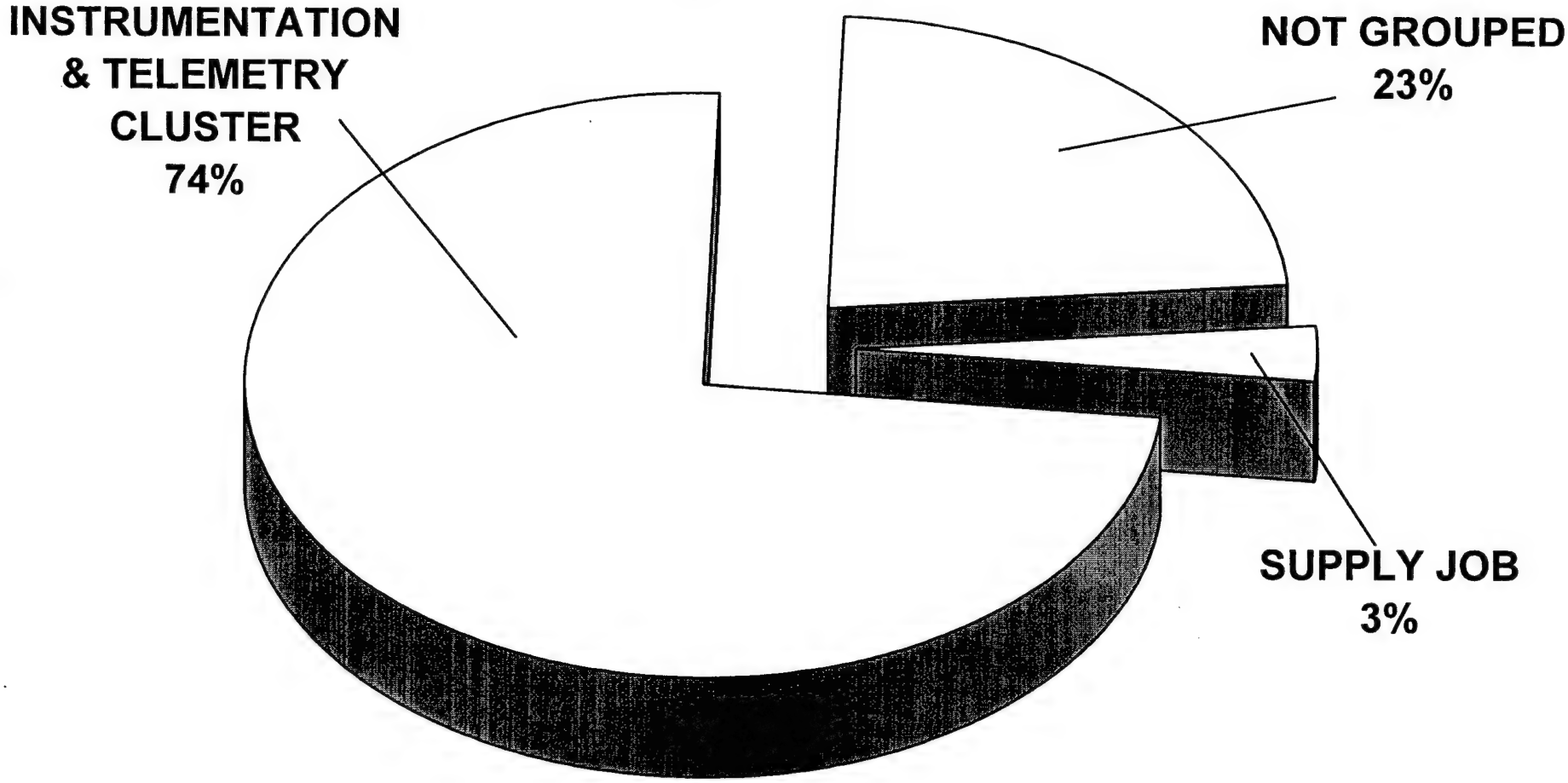

FIGURE 2

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT PERSONNEL

SELECTED TASKS		PERCENT MEMBERS PERFORMING (N=72)
F317	Assemble or disassemble test equipment or cables	74
F316	Assemble or disassemble equipment, parts, or supplies	69
F336	Solder or desolder components	68
F337	Splice cabling or wiring	64
A66	Install or remove power supplies	58
A42	Install or remove instrumentation racks or associated equipment	57
A41	Install or remove instrumentation cables	56
F325	Perform continuity checks of electrical harnesses	56
D264	Isolate equipment malfunctions	50
C197	Adjust voltages or frequencies	49
F330	Remove or replace chassis or circuit card assemblies	46
N648	Inventory equipment, tools, parts, or supplies	43
B157	Inspect power supplies	43
D262	Collect test data	42
A1	Establish setup requirements for instrumentation equipment	42
D266	Operationally check antenna systems	42
D281	Perform corrections or repairs during tests	42
B136	Inspect installation of electrical harnesses or connectors	42
A6	Install or remove antennas	42
B108	Inspect batteries	40
N654	Pick up or deliver equipment, tools, parts, or supplies	40
A56	Install or remove panels, doors, hatches, or cableways	40
N655	Store equipment, tools, parts, or supplies	39
F329	Remove or replace batteries, such as nickel cadmium, lead acid, or alkaline	39
B137	Inspect installation of panels, doors, hatches, or cableways	39
F335	Remove or treat corrosion	39
H463	Interpret blueprints, cabling, or circuit schematic diagrams	38
F324	Modify or demodify instrumentation systems	36
F388	Troubleshoot power supplies	36
D287	Perform pretest systems checks or calibrations	35
F318	Charge or discharge batteries	35

Average number of tasks performed: 61

TABLE 18

INSTRUMENTATION AND TELEMETRY SYSTEMS USED BY
MORE THAN 20 PERCENT OF FIRST-JOB OR
FIRST-ENLISTMENT AFSC 2E8X1 PERSONNEL

EQUIPMENT	PERCENT MEMBERS USING 1ST JOB (N=44)	1ST ENL (N=72)
Data Recording	45	43
Telemetry Systems	45	43
Pulse Code Modulation (PCM)	39	39
Frequency Modulation (FM)/FM	30	33
Hardwire	27	31
Airborne Data Acquisition	25	29
Computer Based Data Acquisition Systems	30	29
Timing	27	28
Command Destruct Systems	27	24
GPS Integrated Systems	30	24
Thermal Measurement	25	24
Video Systems	25	24
GPS Reference Systems	27	21
Pressure Measurement	23	21
Transponder Tracking	25	21

TABLE 19

INSTRUMENTATION AND TELEMETRY SYSTEMS MAINTAINED BY MORE THAN 20 PERCENT OF FIRST-JOB OR FIRST-ENLISTMENT AFSC 2E8X1 PERSONNEL

EQUIPMENT	PERCENT MEMBERS USING 1ST JOB (N=44)	1ST ENL (N=72)
Telemetry Systems	52	49
Pulse Code Modulation	36	36
Data Recording	36	35
Airborne Data Acquisition	30	31
Hardwire	23	28
Video Systems	23	21

TABLE 20

GENERAL PURPOSE EQUIPMENT USED BY MORE THAN 20 PERCENT OF FIRST-JOB OR FIRST-ENLISTMENT AFSC 2E8X1 PERSONNEL

EQUIPMENT	PERCENT MEMBERS USING 1ST JOB (N=44)	1ST ENL (N=72)
Soldering Irons	84	82
Power Handtools	82	79
Common Handtools	80	78
Power Supplies	75	75
Personal Computers	68	69
Bench Power Tools	57	60
Torque Wrenches	59	53
Antennas	59	50
Battery Packs	32	39
Television or Video Monitors	39	39
Bit Synchronizers	36	35
Pneumatic Tools	39	35
Frequency Oscillators	34	33
Instrumentation Amplifiers	32	32
Magnetic Tape Recorders	39	32
Video Cameras	34	31
Power Generators	32	31
Power Amplifiers	23	29
Digital to Analog Converters	23	29
Analog Signal Conditioning Equipment	30	29
Multiplexers	34	29
Voltage Controlled Oscillators	27	29
Spectrum Display Units	27	29
PCM Decommutation Units	32	28
Time Code Generators	36	28
Patchboards	20	28
Oscilloscope Cameras	25	26
Frequency Converters	30	26
Countdown Clocks	30	26
GPS Receivers	34	26
Load Simulators	30	26
Transponders	34	26
Wire Wrapping Equipment	25	25
Demodulators	23	24
RF Receivers	30	24
Discriminators	20	22
Missile Handling Equipment	23	22
RF Transmitters	30	22
Data Reduction Equipment	20	21

TABLE 21

TEST EQUIPMENT USED BY MORE THAN 20 PERCENT OF
FIRST-JOB OR FIRST-ENLISTMENT AFSC 2E8X1 PERSONNEL

EQUIPMENT	PERCENT MEMBERS USING 1ST JOB (N=44)	1ST ENL (N=72)
Digital Multimeters	84	85
Digital Oscilloscopes	75	69
Analog Oscilloscopes	68	63
Frequency Counters	50	53
Spectrum Analyzers	55	50
Electronic Counters	48	50
Ammeters	45	49
Analog Multimeters	34	43
RF Signal Generators	43	42
Function Generators	32	38
Power Meters	39	36
RF Attenuators	39	35
Pulse Signal Generators	39	33
Frequency Meters	27	32
Electronic Filters	27	31
Sweep Generators	32	28
Synthesizers Frequency	27	25
Capacitor testers	25	25
Megohmmeters	25	22
RF Wattmeters	23	21

types of equipment. Eighty-two different types of equipment had responses of greater than 20 percent members performing. This table illustrates the large variety of equipment by a large percentage of these members to perform their job. This type of information is useful for both technical school and MAJCOM training personnel to assist them in focusing limited training time or other resources on the most utilized items.

Training Emphasis (TE) and Task Difficulty (TD) Data

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank-ordering of those tasks in the JI considered important for first-enlistment training (TE) (see Table 22 for the top-rated tasks) along with a measure of the difficulty (TD) of the JI tasks (see top rated tasks presented in Table 23). A total of 74 tasks were rated high in TE having a rating of over 2.35. Tasks rated highest in TE are technical tasks which include: soldering or desoldering components; isolating equipment malfunctions; splicing cabling or wiring; interpreting blueprints, cabling, or circuit schematic diagrams; performing continuity checks of electrical harnesses; fabricating test cables; constructing interconnecting cabling; and assembling or disassembling equipment, parts, or supplies. Although these tasks are rated high in TE and viewed as necessary for training of first-enlistment personnel, many of these tasks are for the most part not viewed as difficult to learn. Technical tasks receiving highest TD ratings involve: designing munitions firing systems, developing computer programs, designing printed circuit boards, and installing or removing ignitors. When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, AFOMS has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 2, AETCI 36-2601, Occupational Analysis Program, and allows course personnel to quickly focus their attention on those tasks which are most likely to qualify for initial resident course consideration.

Various lists of tasks, accompanied by TE and TD ratings, and where appropriate, ATI information, are contained in the TRAINING EXTRACT package and should be reviewed in detail by technical school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.)

TABLE 22

DAFSC 2E8X1 TASKS WITH HIGHEST TRAINING EMPHASIS RATINGS

TASKS		TNG EMP*	% MBRS PERFORMING 1ST JOB (N=44)	% MBRS PERFORMING 1ST ENL (N=72)	TASK DIFF**
F336	Solder or desolder components	7.58	64	68	4.24
D264	Isolate equipment malfunctions	6.77	45	50	7.25
F337	Splice cabling or wiring	6.73	52	64	4.28
H463	Interpret blueprints, cabling, or circuit schematic diagrams	6.58	36	38	5.72
F325	Perform continuity checks of electrical harnesses	6.42	50	56	3.34
G441	Fabricate test cables	6.00	25	32	4.60
G424	Construct interconnecting cabling	5.77	32	33	4.74
F316	Assemble or disassemble equipment, parts, or supplies	5.58	61	69	4.50
F317	Assemble or disassemble test equipment or cables	5.58	73	74	4.39
F339	Test digital integrated circuits	5.23	20	24	5.47
F331	Remove or replace discrete electronic circuits	5.19	23	32	4.68
G437	Draw circuit schematics or wiring diagrams	4.73	5	8	6.55
F338	Test analog integrated circuits	4.69	16	21	5.43
F340	Test discrete electronic components, other than integrated circuits	4.58	14	18	5.22
G417	Compute values of circuit components	4.54	14	17	5.20
F330	Remove or replace integrated circuits	4.50	32	46	4.00
F388	Trouble power supplies	4.42	30	36	5.65
H464	Interpret logic diagrams	4.42	0	8	5.78
G421	Construct circuits using integrated circuits	4.38	16	17	5.47
D262	Collect test data	4.31	48	42	5.98
G423	Construct circuits using transistors or discrete components	4.31	9	13	5.55
F333	Remove or replace integrated circuits	4.31	16	29	5.30
F369	Troubleshoot installation of electrical harnesses or connectors	4.27	20	28	5.23

* TE MEAN = 1.21; S.D. = 1.14

** TD MEAN = 5.00; S.D. = 1.00

TABLE 23

DAFSC 2E8X1 TASKS WITH HIGHEST TASK DIFFICULTY RATINGS

TASKS		TASK DIFF*	PERCENT MEMBERS PERFORMING 1ST JOB (N=44)	1ST ENL (N=72)	DAFSC 2E851	DAFSC 2E871	TNG EMP
G423	Design munitions firing systems	8.22	0	1	1	1	.15
E298	Develop computer programs	7.79	5	4	5	9	1.27
G433	Design printed circuit boards	7.61	0	1	6	7	2.04
I475	Install or remove ignitors	7.59	5	3	4	3	.35
C241	Align or calibrate RF telemetry receivers	7.50	18	19	17	15	2.04
F395	Troubleshoot RF telemetry receivers	7.29	20	19	16	12	1.23
G435	Design transducer systems	7.29	2	1	2	3	1.15
D264	Isolate equipment malfunctions	7.25	45	50	55	38	6.77
C256	Align or calibrate UHF/VHF/SHF receivers	7.21	9	6	8	3	1.50
F409	Troubleshoot UHF/VHF/SHF receivers	7.18	9	7	11	4	1.46
F391	Troubleshoot PSK signal simulators	7.15	2	3	2	3	.46
G439	Fabricate digital microprocessor systems	7.07	0	0	1	1	1.08
E295	Analyze and interpret test data	7.04	9	13	21	27	2.08
F384	Troubleshoot PCM decommutation units	7.01	7	8	14	9	1.04
F390	Troubleshoot PSK decommutation units	6.95	5	6	5	3	.73
E304	Draft or write technical reports	6.94	9	7	9	18	.7
E299	Develop or write inputs to the universal documentation system (UDS)	6.93	0	0	1	5	.38
C219	Align or calibrate magnetic data tape recorders	6.91	5	8	14	16	2.46
D283	Perform emergency destruct sequences	6.90	11	13	5	1	.54

TD MEAN = 5.00; S.D. = 1.00
TE MEAN = 1.21; S.D. = 1.14

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the survey booklet to provide indications of job satisfaction.

Table 24 presents job satisfaction data for AFSC 2E8X1 TAFMS groups, together with TAFMS data for a comparative sample of mission equipment management career ladders surveyed in 1996. This data can give a relative measure of how the job satisfaction of AFSC 2E8X1 personnel compares with other similar Air Force specialties. Review of Table 24 reflects that responses from AFSC 2E8X1 TAFMS groups regarding job interest, use of training, reenlistment intentions, and sense of accomplishment gained from work are all positive (59 percent or more). For one group (49-96 months TAFMS) in the current study, lower positive responses were noted in perceived use of talents than for the comparative sample.

An indication of how job satisfaction perceptions have changed over time is provided in Table 25, where again TAFMS data for 1996 survey respondents are presented, along with data from respondents in the last OSR involving this career ladder published in 1991 (AFSC 316X3). Comparison of job satisfaction indicator responses of the current survey TAFMS groups to those in the 1991 survey indicates that current job satisfaction responses are somewhat higher than those in 1991.

Finally, Table 26 presents job satisfaction responses from personnel in the specialty jobs discussed in the **SPECIALTY JOBS** section of this report. An examination of these data can show how overall job satisfaction may be influenced by the type of job performed. Review of the job satisfaction data for the Instrumentation and Telemetry Systems career ladder reveals generally positive responses in the five job satisfaction indicators across all jobs with the exception of perceived use of talents for the Management and Supply jobs.

A few jobs within this study revealed low ratings for some of the five job satisfaction indicators. Personnel in the Supervisor and Management Cluster (Supply Job) revealed only 34 percent responding positively to perceived use of training and only 50 percent responding positively to sense of accomplishment from their job. Personnel in the Supply Job also revealed a low positive response (33 percent) to perceived use of training from their job. Personnel in the Management and Contract jobs show low reenlistment intentions, while the Test and Evaluation Job shows high reenlistment intentions.

IMPLICATIONS

This survey was initiated to provide current job and task data for use in evaluating the AFMAN 36-2108 *Specialty Description* and training documents.

TABLE 24

JOB SATISFACTION INDICATORS FOR AFSC 2E8X1 TAFMS GROUPS
IN CURRENT STUDY TO A COMPARATIVE SAMPLE
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	AFSC 2E8X1 (N=72)	COMP SAMPLE (N=518)	AFSC 2E8X1 (N=54)	COMP SAMPLE (N=427)	AFSC 2E8X1 (N=173)	COMP SAMPLE (N=725)
EXPRESSED JOB INTEREST:						
INTERESTING	72	75	63	73	77	78
SO-SO	10	16	17	16	14	15
DULL	18	9	20	11	8	8
NONRESPONSE	-	*	1	*	-	*
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO VERY WELL	76	82	61	82	81	84
NONE TO VERY LITTLE	24	17	39	17	19	15
NONRESPONSE	-	*	-	*	-	*
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	67	82	57	82	64	80
NONE TO VERY LITTLE	33	11	43	16	36	18
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	69	73	63	72	78	74
NEUTRAL	14	14	13	13	18	11
DISSATISFIED	17	13	24	15	14	15
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	59	63	70	73	67	78
NO OR PROBABLY NO	41	36	30	26	24	7
WILL RETIRE	0	*	0	*	25	15

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding or nonresponse
Comparative sample of MISSION EQUIPMENT MANAGEMENT Career ladders surveyed in 1996.
(Include AFSCs 2AXXX, 2EXXX, 2MXXX, 2P0X1, 2WXXX, and 3E8X1)

TABLE 25

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 2E8X1
TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDY
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	CURRENT 2E8X1 (N=72)	1991 (N=52)	CURRENT 2E8X1 (N=54)	1991 (N=98)	CURRENT 2E8X1 (N=173)	1991 (N=193)
EXPRESSED JOB INTEREST:						
INTERESTING	72	60	63	75	77	83
SO-SO	10	21	17	15	14	10
DULL	18	19	20	10	8	7
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	76	71	61	72	81	87
NONE TO VERY LITTLE	24	29	39	28	19	13
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	67	62	57	47	64	67
NONE TO VERY LITTLE	33	38	43	53	36	33
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	69		63		78	
NEUTRAL	14		13		8	
DISSATISFIED	17		24		14	
NONRESPONSE						
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	59	56	70	66	67	70
NO OR PROBABLY NO	41	42	30	33	24	6
WILL RETIRE	0	0	0	1	25	24

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 26

JOB SATISFACTION INDICATORS FOR AFSC 2E8X1 JOB GROUPS
(PERCENT MEMBERS RESPONDING)

	INSTRUMENTATION AND TELEMETRY CLUSTER		SUPERVISORY AND MANAGEMENT CLUSTER			
	GEN MAINT (ST028)	TEST AND EVALUATION (ST039)	SUPPLY (ST151)	MGT (ST103)	CONTRACT (ST085)	SUPPLY JOB (ST075)
EXPRESSED JOB INTEREST:						
INTERESTING	66	80	83	73	100	50
SO-SO	15	10	17	21	0	0
DULL	19	10	0	6	0	50
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECT	73	79	83	80	100	50
NONE TO VERY LITTLE	27	21	17	20	0	50
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECT	73	66	34	66	86	33
NONE TO VERY LITTLE	27	34	66	34	14	67
SENSE OF ACCOMPLISHMENT FROM JOB:						
SATISFIED	71	72	100	82	100	50
NEUTRAL	10	11	0	6	0	17
DISSATISFIED	19	17	0	12	0	33
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	65	74	67	38	57	66
NO OR PROBABLY NO	31	20	0	6	0	17
WILL RETIRE	4	6	33	56	43	17

Overall, survey data for the Instrumentation and Telemetry Systems career ladder reflects a well functioning career ladder. Personnel progress typically through the career ladder with 3- and 5-skill level members performing technical tasks; 7-skill level members performing a mixture of technical and supervisory functions; and 9-/CEM skill level members performing career ladder management tasks. Survey data show the AFMAN 36-2108 *Specialty Description* accurately reflects the jobs and tasks currently being performed in the career ladder.

Survey results described in the **SPECIALTY JOB** section clearly suggest that the Instrumentation and Telemetry Systems career ladder has seen changes in career structure since the previous survey in 1991. As the number of assigned personnel have dwindled, so have the number of overall jobs being performed. Personnel still seem to be scattered over a large area performing base-specific tasks. For example, test and inspection of missile and airborne systems are performed at Vandenberg AFB (ICBM), Hill AFB (ICBM), and Holloman AFB (Aircraft Missiles and Navigation Systems), Edwards AFB (AWACS), Barksdale AFB (ACM, ALCM, B-1, B-52). Personnel in the General Maintenance and Test and Evaluation jobs make up the bulk of the career ladder and perform a job broader in scope than any other job identified in the career ladder.

Members of the Instrumentation and Telemetry Systems specialty appear to be fairly satisfied with their jobs, with job satisfaction indicators generally higher than those in the 1991 survey. The most notable exception is the somewhat lower positive responses concerning perceived use of talents by the current survey in the 49-96 months TAFMS group compared to those in 1991.

APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY SPECIALTY JOB GROUPS

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TABLE I

SUPPLY JOB
(ST075)

GROUP SIZE: 6
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-4/5
AVERAGE NUMBER OF TASKS PERFORMED: 30

AVERAGE TICF: 67 MOS
AVERAGE TAFMS: 92 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
N648	Inventory equipment, tools, parts, or supplies	100
N645	Initiate documentation to turn in excess or surplus property	100
N647	Initiate requisitions for equipment, tools, parts, or supplies	83
N655	Store equipment, tools, parts, or supplies	83
N649	Issue or log turn-ins of equipment, tools, parts, or supplies	83
N644	Identify and report equipment or supply problems	83
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	83
N652	Maintain organizational equipment or supply records, such as custodian authorization/custody receipt listings (CA/CRLs)	67
N653	Maintain precision measurement equipment (PME) calibration schedules	67
N654	Pick up or deliver equipment, tools, parts, or supplies	67
N643	Evaluate serviceability of equipment, tools, parts, or supplies	67
N641	Coordinate supply-related matters with appropriate agencies	50
N646	Initiate letters of justification for supply-related matters	50
N640	Coordinate maintenance of equipment with appropriate agencies	50
N651	Maintain documentation on items requiring periodic inspections	50
K536	Establish procedures for accountability of equipment, tools, parts, or supplies	50
A17	Install or remove computer systems	50
F336	Solder or desolder components	50
N650	Maintain benchstock parts or equipment levels	33
M630	Maintain administrative files	33
M633	Maintain technical order libraries	33
D264	Isolate equipment malfunctions	33
D287	Perform pretest systems checks or calibrations	33
K551	Evaluate procedures for storage, inventory, or inspection of property items	33
K505	Conduct safety inspections of equipment or facilities	33
K548	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	33
B157	Inspect power supplies	33

TABLE II

INSTRUMENTATION AND TELEMETRY CLUSTER
(ST027)

GROUP SIZE: 175
PERCENT OF SAMPLE: 59%
PREDOMINANT GRADE: E-4/5
AVERAGE NUMBER OF TASKS PERFORMED: 102
AVERAGE TICF: 73 MOS
AVERAGE TAFMS: 95 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F317	Assemble or disassemble test equipment or cables	84
F336	Solder or desolder components	84
F316	Assemble or disassemble equipment, parts, or supplies	81
F337	Splice cabling or wiring	76
F325	Perform continuity checks of electrical harnesses	75
A66	Install or remove power supplies	75
A42	Install or remove instrumentation racks or associated equipment	69
D264	Isolate equipment malfunctions	67
A41	Install or remove instrumentation cables	66
G424	Construct interconnecting cabling	62
A6	Install or remove antennas	62
F330	Remove or replace chassis or circuit card assemblies	61
B136	Inspect installation of electrical harnesses or connectors	58
C197	Adjust voltages or frequencies	58
D281	Perform corrections or repairs during tests	58
A26	Install or remove electrical harnesses or connectors	57
H463	Interpret blueprints, cabling, or circuit schematic diagrams	57
B157	Inspect power supplies	57
D262	Collect test data	56
G441	Fabricate test cables	56
N648	Inventory equipment, tools, parts, or supplies	55
A56	Install or remove panels, doors, hatches, or cableways	55
D266	Operationally check antenna systems	53
L594	Conduct OJT	53
B137	Inspect installation of panels, doors, hatches, or cableways	51
F329	Remove or replace batteries, such as nickel cadmium, lead acid, or alkaline	51
B107	Inspect antenna systems	49
F324	Modify or demodify instrumentation systems	49
F335	Remove or treat corrosion	49
D265	Monitor data collecting systems	48
F332	Remove or replace electronic units, drawers, or assemblies	48
F369	Troubleshoot installation of electrical harnesses or connectors	48
N655	Store equipment, tools, parts, or supplies	48

TABLE III

GENERAL MAINTENANCE JOB
(ST028)

GROUP SIZE: 48
PERCENT OF SAMPLE: 16%
PREDOMINANT GRADE: E-4
AVERAGE NUMBER OF TASKS PERFORMED: 87

AVERAGE TICF: 59 MOS
AVERAGE TAFMS: 83 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F336	Solder or desolder components	90
F317	Assemble or disassemble test equipment or cables	85
F316	Assemble or disassemble equipment, parts, or supplies	83
F337	Splice cabling or wiring	81
F325	Perform continuity checks of electrical harnesses	79
A66	Install or remove power supplies	69
F330	Remove or replace chassis or circuit card assemblies	67
G424	Construct interconnecting cabling	65
F333	Remove or replace integrated circuits	60
A6	Install or remove antennas	60
A41	Install or remove instrumentation cables	58
A42	Install or remove instrumentation racks or associated equipment	58
A26	Install or remove electrical harnesses or connectors	56
H463	Interpret blueprints, cabling, or circuit schematic diagrams	50
G441	Fabricate test cables	50
F331	Remove or replace discrete electronic circuits	48
D264	Isolate equipment malfunctions	42
D281	Perform corrections or repairs during tests	42
C197	Adjust voltages or frequencies	40
A56	Install or remove panels, doors, hatches, or cableways	40
N648	Inventory equipment, tools, parts, or supplies	38
F324	Modify or demodify instrumentation systems	38
G420	Construct circuits using conventional resistors or capacitors	38
L594	Conduct OJT	38
F369	Troubleshoot installation of electrical harnesses or connectors	38
G422	Construct circuits using printed circuit boards	38
N655	Store equipment, tools, parts, or supplies	35
F338	Test analog integrated circuits	35
G421	Construct circuits using integrated circuits	35
B136	Inspect installation of electrical harnesses or connectors	33
D266	Operationally check antenna systems	33
O656	Access core automated maintenance system (CAMS) menus and data screens	33

TABLE IV

TEST AND INSPECTION
(ST039)

GROUP SIZE: 126
PERCENT OF SAMPLE: 426%
PREDOMINANT GRADE: E-4/5
AVERAGE NUMBER OF TASKS PERFORMED: 120

AVERAGE TICF: 79 MOS
AVERAGE TAFMS: 99 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
F317	Assemble or disassemble test equipment or cables	84
F336	Solder or desolder components	83
F316	Assemble or disassemble equipment, parts, or supplies	81
D264	Isolate equipment malfunctions	78
A66	Install or remove power supplies	78
F325	Perform continuity checks of electrical harnesses	74
A42	Install or remove instrumentation racks or associated equipment	74
F337	Splice cabling or wiring	74
B157	Inspect power supplies	71
A41	Install or remove instrumentation cables	70
B136	Inspect installation of electrical harnesses or connectors	68
D262	Collect test data	67
C197	Adjust voltages or frequencies	65
D281	Perform corrections or repairs during tests	64
D265	Monitor data collecting systems	63
N648	Inventory equipment, tools, parts, or supplies	62
A6	Install or remove antennas	62
D266	Operationally check antenna systems	61
A56	Install or remove panels, doors, hatches, or cableways	61
G424	Construct interconnecting cabling	60
H445	Coordinate instrumentation checkouts with other test teams	60
H463	Interpret blueprints, cabling, or circuit schematic diagrams	60
F330	Remove or replace chassis or circuit card assemblies	60
F329	Remove or replace batteries, such as nickel cadmium, lead acid, or alkaline	60
D269	Operationally check data collecting systems	59
G441	Fabricate test cables	59
B137	Inspect installation of panels, doors, hatches, or cableways	59
A1	Establish setup requirements for instrumentation equipment	59
L594	Conduct OJT	58
F332	Remove or replace electronic units, drawers, or assemblies	57
D287	Perform pretest systems checks or calibrations	57
A26	Install or remove electrical harnesses or connectors	57

TABLE V

SUPERVISION AND MANAGEMENT CLUSTER
(ST049)

GROUP SIZE: 54
PERCENT OF SAMPLE: 17%
PREDOMINANT GRADE: E-7
AVERAGE NUMBER OF TASKS PERFORMED: 87

AVERAGE TICF: 176 MOS
AVERAGE TAFMS: 210 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	TASKS	PERCENT MEMBERS PERFORMING
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	87
K517	Determine or establish work assignments or priorities	80
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	80
K585	Write recommendations for awards or decorations	80
K506	Conduct self-inspections or self-assessments	80
K581	Supervise military personnel	78
K584	Write performance reports or supervisory appraisals	78
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	78
K514	Counsel subordinates concerning personal matters	78
K509	Conduct supervisory performance feedback sessions	74
K549	Evaluate personnel for compliance with performance standards	74
K560	Inspect personnel for compliance with military standards	74
K550	Evaluate personnel for promotion, demotion, reclassification, or special awards	72
K512	Coordinate work activities with contractor personnel	70
K521	Develop or establish work schedules	70
K535	Establish performance standards for subordinates	70
K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	70
K501	Assign personnel to work areas or duty positions	69
K505	Conduct safety inspections of equipment or facilities	69
K520	Develop or establish work methods or procedures	69
K574	Review drafts of instructions, manuals, or other directives	67
K570	Plan or schedule work assignments or priorities	67
H444	Analyze test requirements to determine support such as equipment, facilities, or personnel	63
K576	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	63
K534	Establish organizational policies, such as operating	61
K583	Write job or position descriptions	59
K562	Interpret policies, directives, or procedures for subordinates	57
K528	Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	56
K527	Direct training functions	56

TABLE VI

SUPPLY JOB
(ST151)

GROUP SIZE: 6
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-5/7
AVERAGE NUMBER OF TASKS PERFORMED: 88

AVERAGE TICF: 159 MOS
AVERAGE TAFMS: 185 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	TASKS	PERCENT MEMBERS PERFORMING
K505	Conduct safety inspections of equipment or facilities	100
K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	100
N647	Initiate requisitions for equipment, tools, parts, or supplies	100
N640	Coordinate maintenance of equipment with appropriate agencies	100
K548	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace	100
N641	Coordinate supply-related matters with appropriate agencies	100
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	100
N643	Evaluate serviceability of equipment, tools, parts, or supplies	100
K506	Conduct self-inspections or self-assessments	100
K520	Develop or establish work methods or procedures	100
N644	Identify and report equipment or supply problems	100
N649	Issue or log turn-ins of equipment, tools, parts, or supplies	100
N646	Initiate letters of justification for supply-related matters	100
N648	Inventory equipment, tools, parts, or supplies	100
N645	Initiate documentation to turn in excess or surplus property	100
K512	Coordinate work activities with contractor personnel	83
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	83
N654	Pick up or deliver equipment, tools, parts, or supplies	83
K517	Determine or establish work assignments or priorities	83
K543	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) Program	83
N655	Store equipment, tools, parts, or supplies	83
N650	Maintain benchstock parts or equipment levels	83
K536	Establish procedures for accountability of equipment, tools, parts, or supplies	83
K552	Evaluate safety or security programs	83
N652	Maintain organizational equipment or supply records, such as custodian authorization/custody receipt listings (CA/CRLs)	83
K570	Plan or schedule work assignments or priorities	83
F336	Solder or desolder components	83

TABLE VII

MANAGEMENT JOB
(ST103)

GROUP SIZE: 35
PERCENT OF SAMPLE: 11%
PREDOMINANT GRADE: E-6/7
AVERAGE NUMBER OF TASKS PERFORMED: 88

AVERAGE TICF: 194 MOS
AVERAGE TAFMS: 226 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	TASKS	PERCENT MEMBERS PERFORMING
K581	Supervise military personnel	97
K584	Write performance reports or supervisory appraisals	97
K585	Write recommendations for awards or decorations	97
K509	Conduct supervisory performance feedback sessions	97
K514	Counsel subordinates concerning personal matters	97
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	94
K550	Evaluate personnel for promotion, demotion, reclassification, or special awards	94
K501	Assign personnel to work areas or duty positions	91
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	91
K549	Evaluate personnel for compliance with performance standards	91
K560	Inspect personnel for compliance with military standards	88
K517	Determine or establish work assignments or priorities	85
K535	Establish performance standards for subordinates	85
K576	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes	85
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	82
K521	Develop or establish work schedules	82
K506	Conduct self-inspections or self-assessments	82
K527	Direct training functions	82
K574	Review drafts of instructions, manuals, or other directives	76
K570	Plan or schedule work assignments or priorities	76
K505	Conduct safety inspections of equipment or facilities	74
K562	Interpret policies, directives, or procedures for subordinates	74
K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	74
K554	Evaluate work schedules	74
K544	Evaluate job or position descriptions	74
K508	Conduct supervisory orientations for newly assigned personnel	74
K502	Assign sponsors for newly assigned personnel	74
K557	Initiate actions required due to substandard performance of personnel	74
K512	Coordinate work activities with contractor personnel	71

TABLE VIII

CONTRACT
(ST085)

GROUP SIZE: 7
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-7
AVERAGE NUMBER OF TASKS PERFORMED: 72

AVERAGE TICF: 158 MOS
AVERAGE TAFMS: 210 MOS

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

TASKS		PERCENT MEMBERS PERFORMING
K512	Coordinate work activities with contractor personnel	100
K539	Evaluate contractor proposals	100
K528	Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops	100
K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	100
H444	Analyze test requirements to determine support such as equipment, facilities, or personnel	86
K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace	86
K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops	86
H449	Coordinate test support with base support agencies	86
K511	Coordinate technical plans with other agencies or higher headquarters	86
K565	Plan briefings, conferences, or workshops	86
K540	Evaluate contractor test reports	71
H445	Coordinate instrumentation checkouts with other test teams	71
K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting	71
E314	Verify or validate technical data	71
E307	Proofread technical data	71
H446	Coordinate test directives with other agencies	71
K574	Review drafts of instructions, manuals, or other directives	71
K520	Develop or establish work methods or procedures	71
H447	Coordinate test item or equipment preparation with technical data agencies or engineers	71
E295	Analyze and interpret test data	71
D263	Coordinate operating clearances with appropriate agencies	71
K510	Coordinate host-tenant or interservice agreements with appropriate agencies	71
K553	Evaluate test configurations	71
H463	Interpret blueprints, cabling, or circuit schematic	71
K538	Evaluate budget requirements	57

APPENDIX B

LISTING OF MODULES AND TASK STATEMENTS

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The following task modules (TMs) were developed to illustrate the content of jobs by summarizing tasks performed in common by incumbents across the Instrumentation and Telemetry Systems career ladder. These TMs were derived by a statistical clustering process in CODAP that identifies groups of related tasks and groups them together to form TMs. The process for identifying these related tasks is called coperformance. Coperformance assumes that if incumbents perform Task A and Task B, there is a high likelihood that these two tasks share common skills and knowledge and can be trained together. For example, if an individual performs one instrumentation and telemetry equipment maintenance task, the probability is very high that he or she will also perform other intelligence librarian tasks. Thus, the group of maintenance tasks can be considered a "natural group" of associated or related tasks (see TM 0001 below). CODAP calculates an index of coperformance for each task with every other task by examining the task performance patterns of all the survey respondents as a whole. The statistical clustering generally approximated these "natural groupings."

The title of each TM is our best estimate as to the general subject content of the group of tasks. These TMs are useful for organizing the task data into meaningful units and as a way to concisely summarize the extensive job data. However, TMs are only one way to organize the information. Other strategies may also be valid.

0001	ST028	Meteorological systems maintenance
1	A46	Install or remove meteorological systems
2	B142	Inspect meteorological systems
3	C210	Align or calibrate frequency converters
4	C220	Align or calibrate meteorological systems
5	F363	Troubleshoot frequency converters
6	F375	Troubleshoot meteorological systems

0002	ST053	Oscillator mixer maintenance
1	A72	Install or remove reference oscillator mixers
2	B103	Inspect aircraft navigational aids
3	B162	Inspect reference oscillator mixers
4	C238	Align or calibrate reference oscillator mixers
5	F392	Troubleshoot reference oscillator mixers

0003	ST035	Communication systems maintenance
1	A49	Install or remove microwave systems
2	A63	Install or remove photographic instrumentation support cameras
3	A79	Install or remove stabilized camera mounts
4	A100	Install or remove video time inserters
5	B111	Inspect CCVS components
6	B113	Inspect communication systems, other than data or video systems
7	B144	Inspect microwave systems
8	B155	Inspect photographic instrumentation support cameras
9	B171	Inspect stabilized camera mounts
10	B184	Inspect video communication systems
11	C191	Adjust microwave generating systems

0003	ST035	Communication systems maintenance (Continued)
12	C192	Adjust microwave measuring systems
13	C195	Adjust RF radiation measuring equipment
14	C202	Align or calibrate CCVS components
15	C221	Align or calibrate microwave systems
16	C247	Align or calibrate stabilized camera mounts
17	D290	Prepare test targets
18	D292	Search and recover instrumentation test items
19	F348	Troubleshoot CCVSs
20	F350	Troubleshoot communications systems, other than data or video systems
21	F377	Troubleshoot microwave systems
22	F386	Troubleshoot photographic instrumentation support systems
23	F412	Troubleshoot video time inserters
24	H461	Install or remove public address or sound systems
25	H462	Install safety warning devices
26	H468	Set up or tear down RF interference systems or screen rooms

0004	ST203	Pneumatic measurement systems maintenance
1	A64	Install or remove pneumatic measurement systems
2	B156	Inspect pneumatic measurement systems
3	C232	Align or calibrate pneumatic measurement systems
4	F387	Troubleshoot pneumatic measurement systems

0005	ST372	Supervise civilians
1	K500	Annotate time and attendance sheets for civilian employees
2	K580	Supervise civilian employees

0006	ST040	Rate tables/centrifuges maintenance
1	A35	Install or remove FSK signal simulators
2	A71	Install or remove rate tables or centrifuges
3	B161	Inspect rate tables or centrifuges
4	C237	Align or calibrate rate tables or centrifuges

0007	ST172	Analog/digital equipment maintenance
1	A4	Install or remove analog or digital distribution amplifiers
2	A5	Install or remove analog signal conditioning equipment
3	B104	Inspect analog or digital distribution amplifiers
4	B105	Inspect analog signal conditioning equipment
5	C199	Align or calibrate analog or digital distribution amplifiers
6	C200	Align or calibrate analog signal conditioning equipment
7	D277	Operationally check signal conditioners
8	F343	Troubleshoot analog or digital distribution amplifiers

0008	ST080	Analyze, or convert test data
1	A53	Install or remove optical disk recorder
2	B147	Inspect optical disk recorders
3	E295	Analyze and interpret test data
4	E296	Convert analog test data into computer data
5	E297	Convert instrumentation data into engineering units
6	E306	Perform test data reduction
7	H454	Encode or decode data
8	H455	Evaluate condition and quality of instrumentation recordings
9	H467	Reproduce instrumentation recordings

0009	ST256	Calibration modules maintenance
1	A2	Install or remove airborne calibration modules
2	B102	Inspect airborne calibration modules
3	B123	Inspect elapsed-time clocks
4	B124	Inspect electronic filters
5	C226	Align or calibrate oscilloscopes

0010	ST164	Install or remove communication systems
1	A1	Establish setup requirements for instrumentation equipment
2	A11	Install or remove closed circuit video systems (CCVSs)
3	A13	Install or remove communication systems, other than data or video systems

0011	ST603	Schedule test facilities/missions
1	K578	Schedule test facilities
2	K579	Schedule test missions

0012	ST208	Perform maintenance management activities
1	O656	Access core automated maintenance system (CAMS) menus and data screens
2	O658	Analyze CAMS data
3	O669	Retrieve CAMS listings or reports
4	O670	Review preventive maintenance schedules
5	O671	Update historical reports in CAMS
6	O672	Update maintenance data collection (MDC) data using CAMS
7	O673	Update personnel data files in CAMS
8	O674	Update workcenter training products in CAMS
9	O675	Verify accuracy of CAMS daily inputs

0013	ST116	Perform test data analysis
1	E300	Develop safety standards for tests
2	E304	Draft or write technical reports
3	E305	Evaluate condition of instrumentation packages or test items after tests

0013	ST116	Perform test data analysis (Continued)
4	E307	Proofread technical data
5	E308	Provide inputs for testing methods
6	E310	Research case files for background materials
7	E311	Research safety operating instructions
8	E312	Research test directives for test specifications
9	E313	Validate contractor test plans
10	E314	Verify or validate technical data
11	E315	Write preliminary test reports

0014	ST224	Photographic instrumentation support systems maintenance
1	A63	Install or remove photographic instrumentation support cameras
2	B155	Inspect photographic instrumentation support cameras
3	F386	Troubleshoot photographic instrumentation support systems

0015	ST198	Install or remove PAM/sonegraph recorders and displays
1	A57	Install or remove pulse amplitude modulation (PAM) decommutation units
2	A58	Install or remove PAM signal simulators
3	A77	Install or remove sonegraph recorders and displays

0016	ST189	Recorder/display systems maintenance
1	A89	Install or remove thermal array recorders
2	B169	Inspect sonegraph recorders and displays
3	C227	Align or calibrate PAM decommutation units
4	C245	Align or calibrate sonegraph recorders or displays
5	C250	Align or calibrate thermal array recorders
6	F403	Troubleshoot thermal array recorders

0017	ST112	Maintain cable distribution junctions
1	A8	Install or remove cable distribution junctions
2	B106	Inspect and verify instrumentation documentation
3	B109	Inspect cable distribution junctions
4	B174	Inspect test items
5	D288	Perform systems integration checks
6	F322	Clean or prepare test surfaces
7	F346	Troubleshoot cable distribution junctions
8	G425	Construct mounting devices for instrumentation systems
9	H460	Install or remove cable trays or conduits

0018	ST239	Perform UPS maintenance
1	A97	Install or remove uninteruptable power supplies (UPSs)
2	B183	Inspect UPSs
3	C258	Align or calibrate UPSs
4	D279	Operationally check UPSs
5	F323	Configure battery power supplies or UPSs
6	F411	Troubleshoot UPSs

0019	ST247	Troubleshoot or set up timing systems
1	F360	Troubleshoot elapsed-time clocks
2	H465	Perform coordinated universal time synchronization procedures
3	H469	Set up timing systems

0020	ST461	Install or remove computer systems
1	A15	Install or remove computer controlled systems
2	A16	Install or remove computer interface circuits
3	A17	Install or remove computer systems

0021	ST167	Perform training activities
1	L589	Assign formal course instructors or on-the-job training (OJT) trainers or certifiers
2	L590	Brief organizational personnel concerning training programs or matters
3	L591	Certify personnel for equipment maintenance or operations positions
4	L613	Prepare job qualification standards (JQSs)

0022	ST226	Develop standard operating procedures
1	E301	Develop standard operating procedures for tests
2	E302	Develop step-by-step equipment maintenance procedures
3	E303	Develop step-by-step equipment operating procedures
4	N642	Develop equipment checklists

0023	ST179	Evaluate or plan tests
1	H456	Evaluate test locations
2	H457	Evaluate test safety requirements
3	K553	Evaluate test configurations
4	K573	Plan test projects

0024	ST153	Digital signal systems maintenance
1	A19	Install or remove demodulators, other than time-code
2	A75	Install or remove SCDs
3	A81	Install or remove subcarrier oscillators (SCOs)
4	B116	Inspect DACs

0024	ST153	Digital signal systems maintenance (Continued)
5	B118	Inspect demodulators, other than time-code
6	B120	Inspect digital signal conditioning equipment
7	B125	Inspect encryption systems
8	B152	Inspect PCM bit synchronizers
9	B153	Inspect PCM decommutation units
10	B154	Inspect PCM signal simulators
11	B167	Inspect SCDs
12	B168	Inspect SCOs
13	C203	Align or calibrate DACs
14	C204	Align or calibrate demodulators, other than time-code
15	C206	Align or calibrate digital signal conditioning equipment
16	C229	Align or calibrate PCM bit synchronizers
17	C230	Align or calibrate PCM decommutation units
18	C231	Align or calibrate PCM signal simulators
19	C243	Align or calibrate SCDs
20	C244	Align or calibrate SCOs
21	F354	Troubleshoot demodulators, other than time-code
22	F356	Troubleshoot digital signal conditioning equipment
23	F384	Troubleshoot PCM decommutation units
24	F385	Troubleshoot PCM signal simulators
25	F397	Troubleshoot SCDs
26	F398	Troubleshoot SCOs
27	H466	Read and decode interrange instrumentation group (IRIG) timing formats

0025	ST315	Tracking systems maintenance
1	A93	Install or remove tracking system components
2	C254	Align or calibrate tracking system components
3	F326	Perform functional checks of tracking systems
4	F407	Troubleshoot tracking system components

0026	ST279	Voltage and current monitoring systems maintenance
1	A101	Install or remove voltage and current monitoring systems
2	B185	Inspect voltage and current monitoring systems
3	C260	Align or calibrate voltage and current monitoring systems
4	F413	Troubleshoot voltage and current monitoring systems
5	I478	Operationally check safe and arm devices

0027	ST273	Measurement systems maintenance
1	A67	Install or remove pressure measurement systems
2	A76	Install or remove sensors or transducers
3	A80	Install or remove stress measurement systems
4	A83	Install or remove temperature measurement systems
5	B172	Inspect stress measurement systems

0028	ST497	GPS maintenance
1	A37	Install or remove global positioning system (GPS) components
2	B133	Inspect GPS components
3	C213	Align or calibrate GPS components
4	D273	Operationally check GPSs
5	F367	Troubleshoot GPS components

0029	ST362	Fiber optics testing
1	A30	Install or remove fiber optics
2	B128	Inspect fiber optics
3	F362	Troubleshoot fiber optics

0030	ST280	Coordinate or plan work activities
1	K512	Coordinate work activities with contractor personnel
2	K564	Participate in general meetings, such as staff meetings, briefings, conferences, or workshops, other than conducting

0031	ST638	Coordinate TDY orders
1	M621	Coordinate obtaining TDY orders with appropriate agencies
2	M627	Initiate requests for TDY orders

0032	ST221	Oscillograph recorder maintenance
1	A55	Install or remove oscillograph recorders
2	B148	Inspect oscillograph recorders
3	B175	Inspect thermal array recorders
4	C217	Align or calibrate light beam recorders
5	C225	Align or calibrate oscillograph recorders
6	F381	Troubleshoot oscillograph recorders

0033	ST202	Evaluate or implement logistic standards
1	K534	Establish organizational policies, such as operating instructions (OIs) or standard operating procedures (SOPs)
2	K536	Establish procedures for accountability of equipment, tools, parts, or supplies
3	K543	Evaluate job hazards or compliance with Air Force Occupational Safety and Health (AFOSH) Program
4	K547	Evaluate logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
5	K548	Evaluate maintenance or utilization of equipment, tools, parts, supplies, or workspace
6	K551	Evaluate procedures for storage, inventory, or inspection of property items
7	K567	Plan equipment or facility maintenance requirements
8	K568	Plan equipment replacement programs

0034	ST337	Evaluate equipment development or modification
1	O662	Evaluate equipment development or modification data
2	O663	Evaluate new, modified, or prototype equipment
0035	ST251	Install or remove test fixtures
1	A84	Install or remove test fixtures
2	A87	Install or remove test items in test fixtures
3	D294	Weigh or measure test items prior to testing
0036	ST229	Perform management/supervisory activities
1	K502	Assign sponsors for newly assigned personnel
2	K522	Develop organizational or functional charts
3	K524	Develop self-inspection or self-assessment program checklists
4	K528	Draft agenda for general meetings, such as staff meetings, briefings, conferences, or workshops
5	K529	Draft budget requirements
6	K544	Evaluate job or position descriptions
7	K545	Evaluate job-related suggestions
8	K556	Indorse performance reports or supervisory appraisals
9	K557	Initiate actions required due to substandard performance of personnel
10	K565	Plan briefings, conferences, or workshops
11	K572	Plan self-inspection or self-assessment programs
12	K583	Write job or position descriptions
0037	ST259	Discriminator maintenance
1	B121	Inspect discriminators, other than SCDs
2	C207	Align or calibrate discriminators, other than SCDs
3	C209	Align or calibrate elapsed-time clocks
4	F358	Troubleshoot discriminators, other than SCDs
0038	ST415	Load simulator maintenance
1	A44	Install or remove load simulators
2	B140	Inspect load simulators
3	C218	Align or calibrate load simulators
4	F373	Troubleshoot load simulators

0039	ST419	SCADA system maintenance
1	A82	Install or remove supervisory control and data acquisition (SCADA) system components
2	B166	Inspect SCADA systems
3	C242	Align or calibrate SCADA systems
4	D276	Operationally check SCADA systems
5	F396	Troubleshoot SCADA systems

0040	ST319	Construct or design circuits
1	G416	Breadboard circuits
2	G417	Compute values of circuit components
3	G419	Construct circuit chassis or boxes
4	G420	Construct circuits using conventional resistors or capacitors
5	G421	Construct circuits using integrated circuits
6	G422	Construct circuits using printed circuit boards
7	G423	Construct circuits using transistors or discrete components
8	G429	Design circuit chassis or boxes
9	G430	Design electronic circuits
10	G437	Draw circuit schematics or wiring diagrams

0041	ST257	Digital signal conditioning equipment maintenance
1	B120	Inspect digital signal conditioning equipment
2	C206	Align or calibrate digital signal conditioning equipment
3	F356	Troubleshoot digital signal conditioning equipment

0042	ST276	Evaluate or develop security programs
1	K519	Develop inputs to mobility, contingency, disaster preparedness, or unit emergency or alert plans
2	K546	Evaluate layouts of facilities
3	K552	Evaluate safety or security programs
4	K569	Plan layouts of facilities
5	K571	Plan safety or security programs

0043	ST535	Install or remove transmitters/receivers
1	A95	Install or remove ultra high-frequency (UHF), very high-frequency (VHF), or super high-frequency (SHF) receivers
2	A96	Install or remove UHF/VHF/SHF transmitters

0044	ST234	Temperature measurement systems maintenance
1	B173	Inspect temperature measurement systems
2	C249	Align or calibrate temperature measurement systems
3	F402	Troubleshoot temperature measurement systems
4	H459	Install high or low pressure lines or fixtures

0045	ST299	Microwave systems maintenance
1	A49	Install or remove microwave systems
2	B144	Inspect microwave systems
3	C221	Align or calibrate microwave systems
4	F377	Troubleshoot microwave systems

0046	ST231	Perform admin and supply activities
1	N640	Coordinate maintenance of equipment with appropriate agencies
2	N641	Coordinate supply-related matters with appropriate agencies
3	N643	Evaluate serviceability of equipment, tools, parts, or supplies
4	N644	Identify and report equipment or supply problems
5	N648	Inventory equipment, tools, parts, or supplies
6	N653	Maintain precision measurement equipment (PME) calibration schedules
7	N654	Pick up or deliver equipment, tools, parts, or supplies
8	N655	Store equipment, tools, parts, or supplies

0047	ST358	Antenna systems maintenance
1	A6	Install or remove antennas
2	A56	Install or remove panels, doors, hatches, or cableways
3	B107	Inspect antenna systems
4	B137	Inspect installation of panels, doors, hatches, or cableways
5	C201	Align or calibrate antenna systems
6	D266	Operationally check antenna systems
7	F345	Troubleshoot antenna systems

0048	ST500	Install, remove, or inspect gas flow systems
1	A36	Install or remove gas flow systems
2	B132	Inspect gas flow systems

0049	ST361	Millimeter wave systems maintenance
1	A50	Install or remove millimeter wave systems
2	C188	Adjust infrared (IR) radiation measuring equipment
3	C222	Align or calibrate millimeter wave systems
4	F378	Troubleshoot millimeter wave systems

0050	ST480	Electronic circuit maintenance
1	F338	Test analog integrated circuits
2	F339	Test digital integrated circuits
3	F340	Test discrete electronic components, other than integrated circuits
0051	ST313	Power supply maintenance
1	B157	Inspect power supplies
2	C197	Adjust voltages or frequencies
3	C233	Align or calibrate power supplies
4	F388	Troubleshoot power supplies
0052	ST391	Battery maintenance
1	B108	Inspect batteries
2	F318	Charge or discharge batteries
3	F329	Remove or replace batteries, such as nickel cadmium, lead acid, or alkaline
0053	ST317	Munitions firing systems maintenance
1	A52	Install or remove munitions firing systems
2	B146	Inspect munitions firing systems
3	C193	Adjust munitions firing systems
4	D274	Operationally check munitions firing systems
5	F380	Troubleshoot munitions firing systems
0054	ST382	Thrust/pressure measurement systems maintenance
1	B158	Inspect pressure measurement systems
2	B176	Inspect thrust measurement systems
3	C234	Align or calibrate pressure measurement systems
4	C251	Align or calibrate thrust measurement systems
5	F389	Troubleshoot pressure measurement systems
6	F404	Troubleshoot thrust measurement systems
0055	ST348	Perform aircrew activities
1	J489	Coordinate correction of aircraft discrepancies or malfunctions with aircraft commander or job control
2	J492	Inspect life support equipment
3	J493	Inspect ramp areas for foreign object damage (FOD) matter
4	J494	Monitor radio communication transmissions
5	J497	Secure equipment for takeoff or landing

0056	ST433	Assemble or disassemble instrumentation/electrical
1	A26	Install or remove electrical harnesses or connectors
2	A41	Install or remove instrumentation cables
3	A42	Install or remove instrumentation racks or associated equipment
4	A66	Install or remove power supplies
5	B136	Inspect installation of electrical harnesses or connectors
6	F316	Assemble or disassemble equipment, parts, or supplies
7	F317	Assemble or disassemble test equipment or cables
8	F325	Perform continuity checks of electrical harnesses
9	F336	Solder or desolder components
10	F337	Splice cabling or wiring

0057	GP001	Maintain or initiate equipment orders/documentation
1	M633	Maintain technical order libraries
2	N645	Initiate documentation to turn in excess or surplus property
3	N646	Initiate letters of justification for supply-related matters
4	N647	Initiate requisitions for equipment, tools, parts, or supplies
5	N649	Issue or log turn-ins of equipment, tools, parts, or supplies
6	N650	Maintain benchstock parts or equipment levels
7	N651	Maintain documentation on items requiring periodic inspections
8	N652	Maintain organizational equipment or supply records, such as custodian authorization/custody receipt listings (CA/CRLs)

0058	GP002	Construct or fabricate cables
1	F324	Modify or demodify instrumentation systems
2	F369	Troubleshoot installation of electrical harnesses or connectors
3	G424	Construct interconnecting cabling
4	G441	Fabricate test cables
5	H463	Interpret blueprints, cabling, or circuit schematic diagrams

0059	GP003	Testing instrumentation and telemetry equipment
1	D262	Collect test data
2	D264	Isolate equipment malfunctions
3	D265	Monitor data collecting systems
4	D269	Operationally check data collecting systems
5	D281	Perform corrections or repairs during tests
6	D285	Perform post-test systems checks or calibrations
7	D287	Perform pretest systems checks or calibrations

0060	GP004	Remove or replace circuits
1	F330	Remove or replace chassis or circuit card assemblies
2	F331	Remove or replace discrete electronic circuits
3	F332	Remove or replace electronic units, drawers, or assemblies

0060	GP004	Remove or replace circuits (Continued)
4	F333	Remove or replace integrated circuits
5	F334	Remove or replace plug-in units, such as filters
6	F335	Remove or treat corrosion

0061	GP005	Maintain RF system components/receivers
1	A73	Install or remove RF system components
2	A74	Install or remove RF telemetry receivers
3	B164	Inspect RF system components
4	B165	Inspect RF telemetry receivers
5	C240	Align or calibrate RF system components

0062	GP006	Communication systems maintenance
1	A70	Install or remove radio frequency (RF) multicouplers
2	B163	Inspect RF multicouplers
3	C239	Align or calibrate RF multicouplers
4	C241	Align or calibrate RF telemetry receivers
5	F393	Troubleshoot RF multicouplers
6	F394	Troubleshoot RF system components
7	F395	Troubleshoot RF telemetry receivers

0063	GP008	Design or install video communications systems/circuits
1	A31	Install or remove fluid systems
2	A99	Install or remove video communications systems
3	D280	Operationally check video communications systems
4	F352	Troubleshoot DACs
5	F414	Wrap or unwrap wirewrapped circuit boards
6	G418	Construct actuating arms or linkages
7	G427	Construct stepping or sequencing circuits or devices
8	G428	Construct wirewrap circuit boards
9	G433	Design printed circuit boards
10	G436	Design wirewrap circuit boards

0064	GP009	Instrumentation equipment maintenance
1	A40	Install or remove instrumentation amplifiers
2	B138	Inspect instrumentation amplifiers
3	C215	Align or calibrate instrumentation amplifiers
4	D268	Operationally check communications systems, other than data or video systems
5	D289	Perform test countdown checklist functions
6	D293	Verify calibration data of components, such as transducers or transmitters
7	F344	Troubleshoot analog signal conditioning equipment
8	F370	Troubleshoot instrumentation amplifiers

0065	GP010	Operationally check command destruct systems
1	D267	Operationally check command destruct systems
2	D278	Operationally check transponder systems
3	F327	Perform voltage standing wave ratio (VSWR) or attenuation checks of waveguides, antennas, or coaxial cables

0066	GP011	Maintain command destruct systems/transponders
1	A12	Install or remove command destruct systems
2	A94	Install or remove transponders
3	B112	Inspect command destruct systems
4	F349	Troubleshoot command destruct systems
5	408	Troubleshoot transponders

0067	GP012	Troubleshoot UHF/VHF/SHF receivers/transmitters
1	D282	Perform emergency abort sequences
2	F328	Refurbish site instrumentation systems
3	F409	Troubleshoot UHF/VHF/SHF receivers
4	F410	Troubleshoot UHF/VHF/SHF transmitters

0068	GP013	Inspect instrumentation and telemetry equipment
1	B117	Inspect data communication systems
2	B179	Inspect tracking system components
3	B180	Inspect transponders
4	B181	Inspect UHF/VHF/SHF receivers
5	B182	Inspect UHF/VHF/SHF transmitters

0069	GP014	Data tape recorder maintenance
1	A45	Install or remove magnetic data tape recorders
2	A92	Install or remove time-code generators
3	B141	Inspect magnetic data tape recorders
4	C219	Align or calibrate magnetic data tape recorders
5	F374	Troubleshoot magnetic data tape recorders

0070	GP015	Time code system maintenance
1	A91	Install or remove time-code demodulators or readers
2	B177	Inspect time-code demodulators or readers
3	B178	Inspect time-code generators
4	C252	Align or calibrate time-code demodulators or readers
5	C253	Align or calibrate time-code generators
6	F405	Troubleshoot time-code demodulators or readers
7	F406	Troubleshoot time-code generators

0071	GP019	Inspect or align recorders/printers
1	B119	Inspect digital recorders or printers
2	C205	Align or calibrate digital recorders or printers
3	F355	Troubleshoot digital recorders or printers
4	H466	Read and decode interrange instrumentation group (IRIG) timing formats

0072	GP020	PCM systems maintenance
1	B152	Inspect PCM bit synchronizers
2	B153	Inspect PCM decommutation units
3	B154	Inspect PCM signal simulators
4	C229	Align or calibrate PCM bit synchronizers
5	C230	Align or calibrate PCM decommutation units
6	C231	Align or calibrate PCM signal simulators
7	F384	Troubleshoot PCM decommutation units
8	F385	Troubleshoot PCM signal simulators

0073	GP021	SCO systems maintenance
1	A81	Install or remove subcarrier oscillators (SCOs)
2	B168	Inspect SCOs
3	C244	Align or calibrate SCOs
4	F398	Troubleshoot SCOs

0074	GP022	SCD systems maintenance
1	A75	Install or remove SCDs
2	B125	Inspect encryption systems
3	B167	Inspect SCDs
4	C243	Align or calibrate SCDs
5	F397	Troubleshoot SCDs

0075	GP023	PSK systems maintenance
1	A62	Install or remove phased shift keying (PSK) decommutation units
2	A69	Install or remove PSK signal simulators
3	B159	Inspect PSK decommutation units
4	B160	Inspect PSK signal simulators
5	C235	Align or calibrate PSK decommutation units
6	C236	Align or calibrate PSK signal simulators
7	F390	Troubleshoot PSK decommutation units
8	F391	Troubleshoot PSK signal simulators

0076	GP024	Mixer amplifiers maintenance
1	A51	Install or remove mixer amplifiers
2	B145	Inspect mixer amplifiers
3	C198	Align or calibrate airborne calibration modules
4	C223	Align or calibrate mixer amplifiers
5	D272	Operationally check frequency division multiplexing (FDM) components
6	F361	Troubleshoot encryption systems
7	F379	Troubleshoot mixer amplifiers

0077	GP025	Coordinate and analyze test systems
1	D263	Coordinate operating clearances with appropriate agencies
2	H444	Analyze test requirements to determine support such as equipment, facilities, or personnel
3	H445	Coordinate instrumentation checkouts with other test teams
4	H446	Coordinate test directives with other agencies
5	H447	Coordinate test item or equipment preparation with technical data agencies or engineers
6	H448	Coordinate test parameters with test directors
7	H449	Coordinate test support with base support agencies

0078	GP026	First line supervisors
1	K509	Conduct supervisory performance feedback sessions
2	K514	Counsel subordinates concerning personal matters
3	K515	Determine or establish logistics requirements, such as personnel, equipment, tools, parts, supplies, or workspace
4	K517	Determine or establish work assignments or priorities
5	K520	Develop or establish work methods or procedures
6	K550	Evaluate personnel for promotion, demotion, reclassification, or special awards
7	K581	Supervise military personnel
8	K584	Write performance reports or supervisory appraisals
9	K585	Write recommendations for awards or decorations

0079	GP027	Evaluate personnel performance patterns
1	K501	Assign personnel to work areas or duty positions
2	K535	Establish performance standards for subordinates
3	K549	Evaluate personnel for compliance with performance standards
4	K560	Inspect personnel for compliance with military standards
5	K576	Schedule personnel for temporary duty (TDY) assignments, leaves, or passes

0080	GP028	Develop or evaluate work schedules
1	K508	Conduct supervisory orientations for newly assigned personnel
2	K521	Develop or establish work schedules
3	K554	Evaluate work schedules

0080	GP028	Develop or evaluate work schedules (Continued)
4	K555	Evaluate workload requirements
5	K562	Interpret policies, directives, or procedures for subordinates
6	K570	Plan or schedule work assignments or priorities

0081	GP029	Determine or implement training requirements
1	K527	Direct training functions
2	L594	Conduct OJT
3	L596	Counsel trainees on training progress
4	L597	Determine training requirements
5	L604	Evaluate personnel to determine training needs
6	L605	Evaluate progress of trainees
7	L609	Maintain training records or files
8	L611	Plan or schedule training
9	L615	Schedule personnel for training

0082	GP030	Maintain or write briefings
1	M631	Maintain or update status indicators, such as boards, graphs, or charts
2	M638	Write minutes of briefings, conferences, or meetings

0083	GP031	Maintain or establish administrative activities
1	K525	Direct administrative functions
2	K532	Establish administrative files, such as correspondence files or classified files
3	M630	Maintain administrative files

0084	GP033	Organize or coordinate management activities
1	K503	Complete USAF Graduate Evaluation Program forms or questionnaires
2	K513	Coordinate work activities with maintenance control
3	K526	Direct cannibalization of equipment
4	K530	Draft supplements or changes to directives, such as instructions, manuals, or indexes
5	K531	Establish access lists
6	K575	Review test documentation
7	L595	Conduct training conferences, briefings, or debriefings
8	O666	Initiate technical order improvement reports

0085	GP034	Write or evaluate accident reports
1	K537	Evaluate accident or incident reports
2	K542	Evaluate inspection report findings or inspection procedures
3	K563	Investigate accidents or incidents
4	K582	Write inspection reports
5	K586	Write replies to inspection reports
6	M620	Complete accident or incident reports

0086	GP035	Perform formal classroom training
1	L588	Administer or score tests
2	L593	Conduct formal course classroom training
3	L598	Develop formal course curricula or plans of instructions (POIs)
4	L600	Develop training materials or aids
5	L601	Develop training programs, plans, or procedures
6	L603	Evaluate effectiveness of training programs, plans, or procedures
7	L610	Personalize lesson plans
8	L614	Procure training aids, space, or equipment
9	L616	Write test questions

0087	GP036	Evaluate or develop training requirements
1	K507	Conduct staff assistance visits, inspections, or audits
2	K577	Schedule staff assistance visits, inspections, or audits
3	L599	Develop performance tests
4	L602	Establish or maintain study reference files
5	L606	Evaluate training methods or techniques of instructors
6	L607	Evaluate training requirements for instructors
7	L608	Inspect training materials or aids for operation or suitability

0088	GP037	Perform contract management activities
1	K510	Coordinate host-tenant or interservice agreements with appropriate agencies
2	K538	Evaluate budget requirements
3	K539	Evaluate contractor proposals
4	K540	Evaluate contractor test reports
5	K558	Initiate host-tenant or interservice agreements
6	K587	Write staff studies, surveys, or routine reports, other than training or inspection reports

0089	GP038	Perform aircrew activities
1	J487	Brief crew members or passengers on emergency procedures
2	J488	Conduct aircrew mission briefings
3	J490	Coordinate flight missions or activities with appropriate agencies
4	J491	Coordinate flight profiles with aircraft commanders
5	J495	Perform aircrew safety observer procedures
6	J496	Schedule aircrew, aircraft, and range requirements for tests
7	J498	Write or update flight manuals, safety and operational supplements, or flight crew checklists

0090	GP039	Perform tech order system activities
1	K518	Determine security classifications for unit generated documents
2	M618	Annotate security forms for facilities or security containers
3	M622	Destroy classified materials

0090	GP039	Perform tech order system activities (Continued)
4	M623	Establish accountability records for classified materials or documents
5	M624	Identify and report suspected security compromises
6	M625	Initiate classified reports, messages, or documents
7	M628	Inventory classified materials
8	M629	Maintain accountability records for classified materials or documents
9	M634	Maintain test data files
10	M635	Prepare administrative or classified materials for mailing, transporting, or issue
11	M637	Safeguard classified materials

0091	GP040	Perform maintenance management activities
1	M632	Maintain publication libraries, other than technical order libraries
2	O660	Coordinate deficiency, service, or status reports with appropriate agencies
3	O661	Evaluate deficiency, service, or status reports
4	O664	Identify problem areas, other than equipment or supply, using deficiency, service, or status reports, such as RODs
5	O665	Initiate deficiency, service, or status reports

0092	GP041	Write or review published documents
1	L617	Write training reports
2	M636	Review publishing bulletins
3	M639	Write or review environmental impact statements

0093	GP043	Perform munitions or ordnance tests
1	I470	Detonate or test munitions or ordnance devices
2	I482	Perform resistance tests of munition items or ordnance devices
3	I485	Perform stray voltage checks

0094	GP044	Munitions or ordnance devices maintenance
1	I472	Install instrumention to munitions or ordnance devices
2	I473	Install munitions or ordnance devices in test fixtures
3	I476	Install or remove safe and arm devices
4	I481	Perform environmental conditioning tests of ordnance or munitions
5	I484	Perform static firings of munitions or ordnance devices

0095	GP049	Maintain video systems
1	A79	Install or remove stabilized camera mounts
2	A100	Install or remove video time inserters
3	B111	Inspect CCVS components
4	B113	Inspect communication systems, other than data or video systems
5	B171	Inspect stabilized camera mounts
6	B184	Inspect video communication systems

0095	GP049	Maintain video systems (Continued)
7	C202	Align or calibrate CCVS components
8	C247	Align or calibrate stabilized camera mounts
9	D290	Prepare test targets
10	D292	Search and recover instrumentation test items
11	F348	Troubleshoot CCVSs
12	F350	Troubleshoot communications systems, other than data or video systems
13	F412	Troubleshoot video time inserters
14	H461	Install or remove public address or sound systems
15	H462	Install safety warning devices

0096	GP053	Maintain capacitve discharge banks
1	A34	Install or remove frequency shift keying (FSK) decommutation units
2	B110	Inspect capacitive discharge banks
3	F319	Charge or discharge capacitive discharge banks
4	F347	Troubleshoot capacitive discharge banks

0097	GP054	Inspect PAM systems
1	B129	Inspect frequency converters
2	B150	Inspect PAM decommutation units
3	B151	Inspect PAM signal simulators

0098	Tasks not referenced	
1	A3	Install or remove aircraft navigational aids
2	A7	Install or remove boresight systems
3	A9	Install or remove capacitive discharge banks
4	A10	Install or remove cinetheodelites
5	A14	Install or remove commutators or multiplexers
6	A18	Install or remove data communication systems
7	A20	Install or remove digital recorders or printers
8	A21	Install or remove digital signal conditioning equipment
9	A22	Install or remove digital to analog converters (DACs)
10	A23	Install or remove discriminators, other than subcarrier discriminators (SCDs)
11	A24	Install or remove diversity combiners
12	A25	Install or remove elapsed-time clocks
13	A27	Install or remove electronic filters
14	A28	Install or remove encryption systems
15	A29	Install or remove equipment heating or cooling systems
16	A32	Install or remove frequency converters
17	A33	Install or remove frequency modulation (FM) recording systems
18	A38	Install or remove hydraulic measurement systems
19	A39	Install or remove infrared systems
20	A43	Install or remove laser systems
21	A47	Install or remove microprocessor systems

0098	Tasks not referenced (Continued)	
22	A48	Install or remove microprocessor test controllers
23	A54	Install or remove optical systems
24	A59	Install or remove pulse code modulation (PCM) decommutation units
25	A60	Install or remove PCM bit synchronizers
26	A61	Install or remove PCM signal simulators
27	A65	Install or remove pneumatic systems
28	A68	Install or remove pressure systems
29	A78	Install or remove spectrum display units
30	A85	Install or remove test items from environmental test chambers
31	A86	Install or remove test items in centrifuges
32	A88	Install or remove test items on vibration tables
33	A90	Install or remove thrust measuring systems
34	A98	Install or remove vacuum systems
35	B114	Inspect commutators or multiplexers
36	B115	Inspect computer controlled systems
37	B122	Inspect diversity combiners
38	B126	Inspect environmental test chambers
39	B127	Inspect equipment heating or cooling systems
40	B130	Inspect FSK decommutation units
41	B131	Inspect FSK signal simulators
42	B134	Inspect hydraulic measurement systems
43	B135	Inspect infrared systems
44	B139	Inspect laser systems
45	B143	Inspect microprocessor test controllers
46	B149	Inspect oscilloscopes
47	B170	Inspect spectrum display units
48	B186	Inspect x-ray equipment
49	C187	Adjust environmental control systems
50	C189	Adjust laser radiation measuring equipment
51	C190	Adjust laser systems
52	C194	Adjust nuclear radiation measuring equipment
53	C196	Adjust thermal or solar radiation measuring equipment
54	C208	Align or calibrate diversity combiners
55	C211	Align or calibrate FSK decommutation units
56	C212	Align or calibrate FSK signal simulators
57	C214	Align or calibrate hydraulic measurement systems
58	C216	Align or calibrate laser systems
59	C224	Align or calibrate optical components
60	C228	Align or calibrate PAM signal simulators
61	C246	Align or calibrate spectrum display units
62	C248	Align or calibrate stress measurement systems
63	C255	Align or calibrate transponders
64	C256	Align or calibrate UHF/VHF/SHF receivers
65	C257	Align or calibrate UHF/VHF/SHF transmitters
66	C259	Align or calibrate vacuum measurement systems
67	C261	Align or calibrate x-ray equipment

0098	Tasks not referenced (Continued)	
68	D270	Operationally check data communications systems
69	D271	Operationally check encryption systems
70	D275	Operationally check PCM components
71	D283	Perform emergency destruct sequences
72	D284	Perform environmental checks of instrumentation packages or test items
73	D286	Perform preinstallation checkouts of sensors or transducers
74	D291	Program patch panels
75	E298	Develop computer programs
76	E299	Develop or write inputs to the universal documentation system (UDS)
77	E309	Punch cards for automatic data processing
78	F320	Clean laser optical surfaces
79	F321	Clean or lubricate stepping switches or relays
80	F341	Troubleshoot airborne calibration systems
81	F342	Troubleshoot aircraft navigational aids
82	F351	Troubleshoot computer controlled systems
83	F353	Troubleshoot data communications systems
84	F359	Troubleshoot diversity combiners
85	F364	Troubleshoot FSK decommutation units
86	F365	Troubleshoot FSK signal simulators
87	F366	Troubleshoot gas flow systems
88	F368	Troubleshoot hydraulic measurement systems
89	F371	Troubleshoot IR systems
90	F372	Troubleshoot laser systems
91	F376	Troubleshoot microprocessor test controllers
92	F382	Troubleshoot PAM decommutation units
93	F383	Troubleshoot PAM signal simulators
94	F399	Troubleshoot sonegraph recorders or displays
95	F400	Troubleshoot spectrum display units
96	F401	Troubleshoot stress measurement systems
97	G415	Apply conformal coating to printed circuit boards
98	G426	Construct munitions firing systems
99	G431	Design mounting devices for instrumentation systems
100	G432	Design munitions firing systems
101	G434	Design test fixtures
102	G435	Design transducer systems
103	G438	Fabricate computer interface circuits
104	G439	Fabricate digital microprocessor systems
105	G440	Fabricate high power and voltage switching devices
106	G442	Perform potting of electronic components or systems
107	G443	Test computer programs
108	H450	Dig or fill cable trenches
109	H451	Dispose of hazardous waste materials
110	H452	Draft facility layouts
111	H453	Draft systems diagrams
112	H458	Fill sandbags
113	H464	Interpret logic diagrams

0098	Tasks not referenced (Continued)	
114	I471	Evaluate expended fuses
115	I474	Install or remove cartridge activated devices (CADs)
116	I475	Install or remove ignitors
117	I477	Install range safety devices in ordnance items
118	I479	Perform acceleration tests of munitions
119	I480	Perform drop tests on munitions
120	I483	Perform shock tests on ordnance or munitions
121	I486	Vibrate test munitions or ordnance devices
122	K499	Annotate project-based time accounting sheets
123	K504	Conduct general meetings, such as staff meetings, briefings, conferences, or workshops
124	K505	Conduct safety inspections of equipment or facilities
125	K506	Conduct self-inspections or self-assessments
126	K511	Coordinate technical plans with other agencies or higher headquarters
127	K516	Determine or establish publication requirements
128	K523	Develop resource protection programs
129	K533	Establish communications security (COMSEC) subaccounts
130	K541	Evaluate disaster preparedness or unit emergency or alert plans
131	K559	Initiate personnel action requests
132	K561	Inspect test site installations
133	K566	Plan deployments of equipment or personnel
134	K574	Review drafts of instructions, manuals, or other directives
135	L592	Complete student entry or withdrawal forms
136	L612	Prepare command standard training packages
137	M619	Compile data for records, reports, logs, or trend analyses
138	M626	Initiate or maintain standby rosters or workcenter pyramid recall rosters
139	O657	Adjust daily maintenance plans to meet operation commitments
140	O659	Clear Red-X conditions
141	O667	Maintain due-in-from maintenance (DIFM) transaction rosters
142	O668	Perform time compliance technical order (TCTO) inspections

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